# THE ELEMENTARY SCHOOL JOURNAL

VOLUME XXXV APRIL 1935 NUMBER 8

## Educational News and Editorial Comment

### THE RÔLE OF THE SCIENTIFIC METHOD IN EDUCATIONAL RECONSTRUCTION

Within a few swift decades we have passed from an essentially rural to an urban civilization. The tempo of change has been so rapid that no aspect of life has been unaffected. Few, if any, of our institutions have escaped the necessity of readjustment. Indeed, it is becoming increasingly clear that many old institutional forms will have to be modified or abandoned altogether. Certain it is that the school will have to adjust itself to the new order of things. This readjustment will no doubt involve the making of many important decisions both with respect to general policies and with respect to specific practices. On what bases will these decisions be made? Are they to be made on the basis of philosophic insight, of scientifically determined facts, of such facts as may be readily available, or on the basis of general, social experience? Obviously, the rôle that scientific method is to play in the reconstruction of social policy is a matter of a great deal of importance. Such is especially the case with respect to education because in the years immediately ahead many, perhaps



Boston University
School of Education
Library

most, of the vital problems will involve matters of broad policy rather than of specific technique.

In an editorial published in a recent issue of the *Phi Delta Kappan*, Professor G. T. Buswell, of the University of Chicago, makes a vigorous defense of the scientific method in education. In view of the importance of the issues involved, we feel justified in quoting the editorial in full.

In the December, 1934, issue of the *Social Frontier* Benjamin Ginzburg considers the position of "The Scientist in a Crumbling Civilization." The discourse is a curious jumble of contradictions aimed to show that the golden age of science is past, that science has become the subservient brain of modern capitalism. Not liking capitalism, Mr. Ginzburg thinks that science has had its day. Limiting the discussion here to the field of education, one finds many sympathizers with Mr. Ginzburg's view. The scientific movement in education, they tell us, must give way for a new era.

Science always suffers in an era of impatience. Planning takes the place of science. New deals and new pronouncements flourish. The slow progress of science seems too conservative. To build only as far as our knowledge permits is not in accord with the ambitions of the present age. We must go beyond science.

In the fields of education the lines of conflict between two sharply opposing schools of thought are being drawn tighter. The one school holds that the better social order, which all desire, will be reached by following grand philosophies formulated in the minds of our prophets; by accepting a priori plans and formulas hastily put together. The other school shares the same ideal goal as the objective, but has an utter distrust of all new plans, new deals, and new formulas which are spun out of the desires of wishful thinkers. It holds that when practices get too far ahead of knowledge the inevitable error in direction makes necessary a long period of reconstruction while the erroneous ways are being forgotten; and that, in the long run, the slower progress which is necessary if we seek the truth as we go, will bring mankind more surely to its final goal and with less suffering en route.

Past educational practices afford many illustrations of the effect of these two opposing schools of thought. We were told in phrases that sounded well that the elementary school was the period for memorization and drill, that reasoning and problem-solving were not in order until after the age of adolescence. Scientific studies of the growth of mental abilities, such as those made by Thorndike and others, eventually dislodged the basis of this a priori theory, and elementary schools profited immensely. Persons who posed as authorities in the field of education decided subjectively what the curriculum in spelling should be and made a curriculum corresponding to their notions. Scientific studies made by Ayres, Horn, and others have completely discredited these a priori views as to what

words children should spell, and again the school has profited enormously. High-sounding phrases to the effect that all men are created free and equal were translated by educational reformers into school practices which treated all children as though they could master the same course of study and learn by uniform methods of teaching. Scientific investigations of individual differences finally convinced the school that a uniform program is impossible and that adjustments to individual needs are necessary. Example after example could be given to show that educational planning which does not rest upon scientific data produces an inevitable error in direction and a corresponding waste of energy.

The scientific movement in the field of education during the last thirty years has produced an entirely new type of literature. School teachers and administrators have a body of factual data on which to build practices which was almost completely lacking thirty years ago. A good beginning has been made, scarcely more than that. In contrast with the development in education through all the years when wishful thinkers have propounded their reforms, the progress of the past thirty years needs no defense. Yet, because the way of science is slow and tedious, impatient reformers now demand that we renounce it as a method, that we create a school for the new social order out of whole cloth, that creation rather than scientific achievement is now the order of the day.

The open discussion of these views in the educational press is stimulating and obviously useful. The changes in practice of some of our leading graduate schools of education in reducing the amount of emphasis upon scientific work is to be viewed with concern.

If the offering of a non-research degree, such as the Doctor of Education, results in shifting the emphasis to practice rather than research, the number of people who are competent to contribute to the scientific knowledge in this field will be notably decreased. In view of the advances in educational practices which even a short thirty years of scientific research have made possible, it seems unthinkable that educational leaders will now turn back to speculation and authority. Yet, with science gone, what else remains but these?

The time for scientific contributions to education was never so opportune as now. The age of easy expansion in education is over. The time for critical research is here. We have witnessed in successive waves popular interest in achievement tests, mental tests, new-type examinations, ability grouping, curriculum revision, project and activity movements, and administrative schemes without number. Popular exploitation of these is past. Real scientific achievement is now possible.

Never was there more need of a clear, unemotional understanding of the place of fundamental research in the field of education than at the present time. Between the wishful thinkers and the ultra-conservatives there is a third party—the progressive realists. This group also works for a better social order, but its faith is in construction, not creation. An age of impatience has its hazards.

## A Comparison of the Educational Achievement of Scottish and American Pupils

In 1931 the Scottish Council for Research in Education sponsored an experiment which had as its chief purposes (1) the comparison of the standards of achievement in schools in Scotland and America and (2) the determination of the applicability of so-called "American achievement tests" to Scottish pupils. The test selected to be given to Scottish children was the Public School Achievement Tests, Battery A, Form 2. The Public School Achievement Tests, it will be recalled, have been well standardized in America by administration to "all types of children in all types of schools in rural districts, in towns, and in cities." The test was given to all the pupils in the County of Fife whose eleventh birthdays fell in the school session 1930–31. The result of this investigation showed that Fife pupils at about eleven years, four months in age are as far advanced in general educational achievement as American pupils sixteen months older. The findings suggested "that the growth curve for school achievement of Fife pupils measured in grades per annum is a straight line parallel to the growth line for American pupils, but 1.3 grades above it." If this supposition is correct, the superiority of Fife pupils at the age of eleven would seem to be due to the fact that, as a rule, they enter school twelve or fifteen months younger than American pupils. To test this hypothesis, tests were given in a second investigation to a representative group of pupils whose ages lay between seven and eleven years, inclusive.

The investigation was conducted by Gregor Macgregor, who has recently published his findings in a volume entitled *Achievement Tests in the Primary School* (Publications of the Scottish Council for Research in Education, VI. London: University of London Press, Ltd., 1934).

The major conclusions of the investigation are summarized as follows:

1. In general level of achievement Fife "eleven-year-olds" are sixteen months ahead of American children of the same age: they are progressing at the rate of a grade per annum. This conclusion is based not on the "total score," which is shown to be unsatisfactory, but on a weighted average grade.

2. Results are found for each of the five constituents involved. In reading

Fife pupils are, on the average, five months ahead: in arithmetic computation, twenty months: in arithmetic reasoning, thirteen months: in language usage, twenty-four months: and in spelling, twenty-nine months.

3. These results give a very vivid impression of the relative standards in American and Scottish schools. In comparison with American practice reading is very definitely the subject which reflects least credit on Fife pupils. It is apparent that in American schools reading comprehension receives much greater attention than is customary in Scottish schools. As the ability to extract meaning from the printed page has an important bearing upon further study, the disclosure of this weakness is worthy of the attention of Scottish teachers and administrators. . . . .

4. Rates of progress throughout the year for different percentiles are calculated for each of the five subjects, and for the median in the case of the weighted average grade.

5. As one consequence it is shown that the Reading Test is the most suitable for Scottish schools, that the Arithmetic Tests are unsatisfactory partly owing to the nature of their content and partly through not being sufficiently difficult, and that the Language Usage and Spelling Tests, though standardized up to Grade IX in American schools, are too easy for the best Fife eleven-year-olds.

6. In addition, from consideration of the actual growth in the year and the average rate of growth per year of schooling, hypotheses are suggested concerning the nature of the growth curves for these constituents in previous years. It appears likely that the growth curve for the weighted average grade has been a straight line showing steady growth comparable with that found in America.

7. By the second investigation it is substantiated that the lead held at eleven and a half is also present at seven and a half. From the results of the survey of the intelligence of Scottish children by the Scottish Council for Research in Education, Fife pupils are shown to be slightly more intelligent on the average than Scottish pupils in general. The effect of this superiority of intelligence is eliminated by translating the results of the achievement test from terms of chronological age into mental age.

8. By discounting the superiority in intelligence of Fife pupils, the results may be read as applicable to all Scottish pupils. These show a lead in educational achievement of fourteen months at seven and a half years of age, which, although it decreases slightly, amounts to twelve months between eleven and a half and twelve years of age.

Efficiency of teaching is required to explain how a Scottish pupil makes almost the same progress as an American pupil twelve months or so older: it does not explain the initial appearance of the fourteen months' lead. This advantage of Scottish pupils in educational achievement is consequently due mainly to the extra fifteen months of schooling. It would thus appear that the practice customary in Scotland of admitting children to school a year or fifteen months earlier than in America is clearly justified on educational grounds.

9. The various hypotheses referred to in Paragraph 6 are verified in a re-

markable measure by the more extensive survey undertaken in the second investigation. The growth curves during five years for Fife pupils in reading and arithmetic computation are concave upwards, exhibiting a progressive improvement in rate of growth. In language usage and spelling the curves are convex upwards, but this characteristic is attributable to deficiencies in the American tests employed, which make them too easy for the brighter eleven-year-olds of Fife and thus produce the flattening of the curves technically described as "ceiling effect." The curve for the weighted average grade is a straight line, practically parallel to the norm for American schools but approximately fifteen months above it in position. . . . .

12. The whole investigation has demonstrated the value of objective achievement tests to Fife teachers. Even with the deficiencies inevitably associated with tests based on the practice of another country and standardized therein, the tests employed have yielded significant results. The experiment certainly justifies the claim that if achievement tests are constructed in conformity with Scottish practice and standardized in Scottish schools, they will prove of exceptional worth to Scottish teachers and administrators in estimating the progress of pupils and of classes at the different stages of instruction. The value of such an assessment would be greatly enhanced if the results were used in conjunction with mental ages derived from norms which could be regarded as indisputably valid for Scottish pupils.

The Scottish experiment leads to a conclusion at variance with a considerable body of opinion in this country. There is evidence to indicate that, if the teaching of reading is postponed until children have reached the mental age of six and one-half years, the chances of failure and discouragement will be greatly reduced. Moreover, the high percentage of failure in Grade I has raised rather sharply the question whether the work of that grade, as now organized, is too difficult for a considerable percentage of children who have a chronological age of six years. American educators will, therefore, be both interested and challenged by the conclusion that the superior achievement of Scottish children results from the fact that they are admitted to school a year or fifteen months earlier than the pupils in this country.

## Freedom of Teaching of the Social Sciences

Schools and colleges in this country are faced with two serious difficulties: (1) They must get funds with which to operate. (2) They must make secure the right to analyze objectively the functioning of existing political, economic, and social institutions. The de-

pression revealed the fact that there are powerful interests which are opposed to the traditional American conception of a free, democratic educational system. In many communities these interests, covering their subtle attacks under the plea of economic necessity, have succeeded in materially curtailing the educational opportunities of youth. More recently there has been launched an attack on the right of teachers, in school and in college, to deal in an objective way with the vital and dynamic issues of contemporary American life. Perhaps the most notorious example of this kind of thing is the attempt of the Hearst papers to make it appear that reputable American universities are harboring professors who are actively engaged in disseminating communistic ideas and in cultivating attitudes of disloyalty. Although the Hearst papers have been the most conspicuous of the "Red" hunters, they are not the only newspapers that have engaged in the badgering of teachers. Other papers have been making a more subtle, and for that reason perhaps a more effective, attack. Witness the following quotation from an editorial in the *Chicago Daily Tribune* in support of a bill to require teachers to take the oath of allegiance.

> It is a reflection on the teaching profession that there have been so many manifestations of hostility to American institutions as to raise this growing demand for an explicit assertion and pledge of loyalty. The extent of the infiltration of subversive ideas has not yet been established, but we know that a considerable number of teachers in New York City are hostile to the American form of government and, while New York is far from being representative of the nation but on the contrary is more like a part of Europe than America, it is well worth while for any American community to require of the teachers of its youth an affirmation of allegiance to the Constitution. It is a requirement which will add to the prestige of the teaching profession and should be welcomed by every loyal teacher. Certainly it is a kind of national suicide to permit teachers who are hostile to our national institutions to impose their own doctrines upon the nation's youth.

In a more recent editorial, entitled "Americanism Asserts Itself," the *Tribune* commented as follows:

> The American Liberty League, a citizens' organization created to support American principles and institutions against the prevailing attacks upon them, has begun to establish chapters in the universities and colleges. Every loyal American who has observed the extent to which students are exposed to subversive theories and influences will welcome this project.

We do not doubt the majority of the faculties and student bodies in our educational institutions are loyal to the great traditions, policies, and institutions of our country. But there are foci of subversive influence which are spreading a perverted criticism of American national experience, together with ideas drawn from European conditions and the radical revolt against them. Against this activity there has been too little open and emphatic assertion of American ideals and accomplishments, an injustice to youth which has a right to protection from subversive propaganda borrowing influence and seeming authority from the teacher's office.

. . . . The impatient idealism and inexperience of youth expose it to the influence of the radical doctrinaire. Youth, perhaps inevitably, reacts against the standards and assumptions of its elders and likes to feel it can better them. That is in the main a useful tendency, but it can be betrayed by false prophets, and of them we have an overproduction in time of trouble. The American order deserves a better defense than it has had from those to whom we have confided the preparation of American youth for the use of the great heritage it possesses and should carry forward.

A part of this campaign to restrict the freedom of teachers is the effort, successful in a number of states, to secure legislation requiring teachers to take an oath of allegiance. To the unsophisticated this requirement may seem harmless and even desirable. Certainly teachers who advocate social change through other than legally constituted means have no right to hold positions in either publicly or privately supported institutions, but, after all, the exclusion of such teachers from our educational system is not the real issue. The primary purpose of legislation requiring teachers to take an oath of allegiance is not to eliminate from the schools the handful of teachers who may be disloyal; the real purpose behind such legislation is to make teachers in general more conservative in the teaching of the social sciences, to prevent even objective criticism of existing institutions, and to make the schools instruments for cultivating in youth an emotional attachment to things as they are.

The whole problem of freedom of teaching of the social sciences is complicated by the fact that the American public, by and large, has been unwilling to regard the schools as proper agencies for the diffusion of social intelligence. Many, perhaps most, of the issues about which youth need to be informed are so controversial in nature that parents have been reluctant to have them discussed in the classroom. The result is that in most American communities the social sciences

have not been given the vital kind of treatment which it is necessary they should have.

By some means the public must be convinced that the school is failing to perform what is perhaps its most useful function when it fails to give youth an understanding of the structure of the society in which they will soon take their place as adults. Moreover, it must be recognized that the study of our political and economic institutions cannot be confined to their outward forms; such study must be directed toward an understanding of their inward workings. Teachers everywhere, in school as well as in college, must be accorded freedom of discussion of such social institutions and values as are within the intellectual competency and the social maturity of their pupils. This statement is not to be taken to mean that teachers should be free to press on youth the acceptance of specific formulas for the solution of social problems; it means that teachers should be free to teach pupils to gather and weigh evidence, to balance arguments, to arrive at critical understandings—in short, to be objective and experimental in their attitudes. Failure to permit such freedom of teaching of the social studies will impede or prevent altogether necessary social adjustments and may in the long run contribute to social collapse. If we are to have a self-repairing society, that is to say, a society in which we are constantly criticizing the effectiveness of our social arrangements and attempting to make such readjustments as conditions may seem to require, we shall have to secure for teachers freedom from the bludgeoning of "Red" hunting journalists, of patriotic societies, of conservative boards of control, and of all others whose vested interests may lead them to oppose rational processes of social change.

## Effect of the Depression on Production of Books in the United States

Every two years the government of the United States takes a census of manufactures, which includes, among other things, the number of books published during the year the census is taken. The figures for 1933 have just appeared. These census reports reveal certain significant trends in the reading interests of the American public. One notes, in the first place, that the total number of books

published declined from approximately 235 millions in 1929 to 120 millions in 1933. For the four-year period 1929–33 there was a sharp decline in the production of every class of books except sociology and economics. Perhaps the most surprising decrease in the number of books published is in the field of fiction, where the decrease was

NUMBER OF BOOKS PUBLISHED IN 1929, 1931, AND 1933 AND PERCENTAGE OF INCREASE OR DECREASE

| Character | Number of Copies 1929 | Number of Copies 1931 | Number of Copies 1933 | Percentage of Change | |
|---|---|---|---|---|---|
| | | | | Between 1933 and 1931 | Between 1933 and 1929 |
| Textbooks (for school use) | 80,189,935 | 65,456,636 | 58,070,083 | −10 | −27 |
| Juvenile | 36,885,167 | 22,416,442 | 22,346,400 | 0 | −38 |
| Agriculture | 688,810 | 276,929 | 131,382 | −52 | −80 |
| Biography | 2,714,090 | 2,175,864 | 1,449,315 | −33 | −47 |
| Fiction | 45,880,162 | 19,248,703 | 11,527,519 | −40 | −75 |
| Fine arts | 1,133,855 | 723,735 | 335,362 | −53 | −70 |
| History | 3,979,604 | 1,192,929 | 831,858 | −30 | −80 |
| Law | 2,942,176 | 1,962,901 | 1,812,946 | − 7 | −38 |
| Medicine | 1,932,909 | 1,440,958 | 674,763 | −53 | −65 |
| Poetry and drama | 4,048,227 | 2,588,831 | 2,589,426 | 0 | −36 |
| Bibles and testaments | ..... | 4,676,680 | 666,448 | −85 | ..... |
| Religion and philosophy | 17,625,949 | 11,696,702 | 6,764,244 | −42 | −61 |
| Science and technology | 2,294,660 | 1,814,585 | 1,611,642 | −12 | −30 |
| Sociology and economics | 1,052,049 | 620,451 | 1,113,513 | +44 | + 5 |
| Travel | 1,725,531 | 2,575,919 | 885,535 | −65 | −48 |
| Miscellaneous | 32,266,878 | 11,169,343 | 7,805,245 | −30 | −76 |
| Bluebooks, directories, etc. | ..... | 4,197,565 | 2,174,222 | −48 | ..... |
| Total | 235,360,002 | 154,235,173 | 120,789,903 | −22 | −49 |

from 45 to 11 millions—a decrease of 75 per cent. The percentages of decrease in the number of books published in certain other subjects were as follows: agriculture, 80; history, 80; fine arts, 70; medicine, 65; religion and philosophy, 61; poetry and drama, 36; science and technology, 30. The trend in the production of textbooks is of special interest. For the two-year period 1929–31 the number of school textbooks decreased 10 per cent, and for the period 1929–33 the decrease was 27 per cent. This decrease in the number of textbooks, it should be remembered, took place at a time when school enrolments

were showing marked increases. The trend in the publication of books on sociology and economics shows very clearly an increasing general interest in these subjects. In 1927, 875,000 books were published in these subjects; by 1929 the number had increased to slightly more than a million; in 1931 it declined to 620,000; and in 1933 it increased to 1,113,000. For the two-year period 1931–33 the percentage of increase in the publication of books on sociology and economics was 44. In 1933, 5 per cent more books were being published in these subjects than in 1929, and 27 per cent more than in 1927.

The table on page 570 is based on data contained in a recent issue of *Publishers' Weekly*. The figures were taken from the census of manufactures.

### Instructional Materials for Adult Classes

In the latter part of 1933 the Federal Emergency Relief Administration approved the expenditure of a portion of relief funds for research on problems of social significance. One of the projects approved under this plan by the Illinois Emergency Relief Commission is known as Educational Research Project 15. The purpose of this project is to determine procedures and to organize instructional materials suitable for adult classes or groups working under the guidance of more or less competent teachers or leaders. The experiment is being worked out under the direction of Professor Clem O. Thompson, of the University of Chicago.

As an outgrowth of the project seven lessons have been prepared for use with adult groups who may or may not have enjoyed the privilege of high-school or college training. The attempt is made in each lesson to use adult ideas and to state them in language sufficiently simple to enable practically any intelligent adult to understand. Each of the lesson units contains five elements: (1) an overview of the problem, written in simple terms and illustrated; (2) a list of questions to illustrate what might be considered legitimate questions on the issue at hand and to provide a basis for further study; (3) an explanation of new terms that might give some difficulty; (4) selected paragraphs from current magazines and books that are pertinent to the discussion; and (5) a bibliography to which students may go for additional materials.

The lessons prepared to date have the following titles:

"What Hope for the Jobless? A Lesson in the Study of Unemployment."

"Must We Spend Our Way Back to Prosperity? The Need of Establishing a Balance between Consumption and Production."

"Enjoy Your Money—Future Investments Limited: Savings as Related to Overproduction."

"The American Farmer—Citizen or Serf? The Status of the American Farmer."

"Why We Are Interested in Electric Power: The Relation of Electric Power to Society."

"Our Economic Jig-Saw Puzzle. Planning and Working for a Better Living."

"Security for the Masses: Do We Need Social Insurance?"

These lessons have two most commendable features: (1) They are written in clear and simple English. (2) They contain numerous graphic charts so designed that their meaning will be readily understood by the reader who is not accustomed to statistical material. Teachers of adult-education classes and leaders of forums and discussion groups should find this material especially helpful.

Copies of the lessons already prepared and of others soon to appear may be secured from Clem O. Thompson, the University of Chicago, Chicago, Illinois.

## Pending State Tax Legislation

In an article summarizing recent tendencies in taxation for public-school support, published in the February number of the *Elementary School Journal*, E. C. Bolmeier pointed out two significant tendencies in taxation policy. The first of these is the tendency to enact legislation establishing a definite limitation on the rate of taxation which may be applied to property. No less than sixteen states enacted such tax-limitation laws during 1932–33. The second tendency, which, no doubt, is in part the result of the first, is the adoption of new types of taxes.

An examination of the bills relating to taxation which have been introduced in state legislatures during the first two months of 1935 reveals that the movement to relieve tax burdens on property and to raise revenue by other forms of taxation is still spreading. The movement manifests itself in a number of ways. In twenty-five states bills have been introduced providing for tax exemptions on property.

These bills do not, of course, exempt all property from taxation. Many of them exempt homesteads entirely or up to a certain amount. In Arkansas the bill provides that farm homesteads up to

TAX BILLS INTRODUCED IN STATE LEGISLATURES IN 1935

| State | Property Tax Exemption | Property Tax Moratorium | Property Tax Rate Limitation | Sales Tax | Graduated Income Tax | Constitutional Amendment Permitting Graduated Income Tax |
|---|---|---|---|---|---|---|
| Alabama | X | | | X | | |
| Arizona | | | X | | | |
| Arkansas | X | | | X | | |
| California | X | X | | | X | |
| Colorado | X | | X | X | X | |
| Connecticut | X | | | | | |
| Georgia | X | | | X | | |
| Idaho | | X | | | | |
| Illinois | | | X | | | X |
| Indiana | X | | | | | X |
| Iowa | X | X | | | | |
| Kansas | X | | | | | X |
| Maryland | | | | | X | |
| Massachusetts | X | | X | X | | X |
| Michigan | X | | | | | |
| Minnesota | | | X | | | |
| Missouri | X | | | | | |
| Nebraska | X | | | | | |
| New Mexico | X | | | | | |
| New York | X | | X | | | |
| North Carolina | X | | | | | |
| North Dakota | | X | | | | |
| Oklahoma | X | | | | | |
| Pennsylvania | X | X | X | | X | |
| South Dakota | X | | | | X | |
| Tennessee | X | | | X | | |
| Texas | X | | | X | | |
| Washington | X | | | | | X |
| West Virginia | X | | | | X | |
| Wisconsin | X | | | | | |
| Wyoming | X | | | | | |

forty acres and city property up to $2,500 in valuation be exempted from certain taxes. The California bill provides for a constitutional amendment whereby property assessed up to $1,500 would be tax exempt. In Connecticut the bill exempts ex-service men from taxation. In five states bills provide for some kind of moratorium on

property taxes. Bills providing for limitations on general property tax rates, applicable to some or all units of government, have been introduced in seven states. It is impossible, of course, at this time to ascertain the fate of these various measures; it is clear, nevertheless, that they indicate a widespread sentiment in favor of lightening the tax burdens on property.

The policy of reducing taxes on property necessitates, of course, the adoption of new types of taxes. Bolmeier in his article pointed out that many new taxes were adopted in 1933 and that, of these new taxes, the sales tax and the income tax proved to be the most popular and the most productive. In fact, by the end of 1934 only eleven states had failed to adopt one or the other of these forms of taxes. It seems likely, moreover, that during 1935 a number of other states will enact laws providing for the sales tax and the income tax. Bills providing for the sales tax in some form have been introduced in seven states, and bills providing for an income tax have been introduced in six states. The popularity of the income tax is also illustrated by the fact that in five states bills have been introduced providing for amendments to the state constitutions which will permit the levying of a graduated income tax.

The table on page 573, compiled from facts contained in a recent issue of the *Tax Magazine*, indicates the states in which certain types of tax measures were introduced in the legislature during the first two months of 1935.

## Who's Who in This Issue

Guy Montrose Whipple, member of the editorial department of D. C. Heath and Company. J. Wayne Wrightstone, research associate at the Institute of School Experimentation, Teachers College, Columbia University. Henry J. Otto, director of education of the W. K. Kellogg Foundation. Ernest O. Melby, dean of the School of Education, Northwestern University. J. E. Wallace Wallin, director of special education and mental hygiene, Delaware Department of Public Instruction. Gertrude Hildreth, psychologist of Lincoln School of Teachers College, Columbia University. Katherine L. McLaughlin, associate professor of education, University of California at Los Angeles.

# NEEDED INVESTIGATIONS IN THE FIELD OF THE TEXTBOOK

GUY MONTROSE WHIPPLE
D. C. Heath and Company, Boston, Massachusetts

Instructors and graduate students seem at times to find difficulty in locating research problems that are both worth doing and feasible.

The textbook is an educational tool of obvious importance and universal use. It presents problems that are psychologically and pedagogically challenging and that are at the same time practically important to perplexed publishers, editors, and authors. Accordingly, I shall try in this article to describe ten problems[1] that have been discussed by a group of Boston textbook editors, in the hope of soliciting attention to them as having academic as well as practical appeal.

1. *Is the Textbook an Unnecessary Pedagogical Adjunct?*

A problem of seeming significance for writers and publishers of textbooks is raised by the assertion—made occasionally by the more enthusiastic proponents of the new in education—that textbooks should be discarded altogether in favor of experiential learning, supplemented by class discussion, projects, and that type of activity somewhat comically designated by the term "research."

Those persons who see in the typical textbook an example of undesirable "subject-matter-set-out-to-be-learned," to quote a phrase of mild opprobrium sometimes used, might contribute valuable information if they would attack this problem experimentally.

[1] The material here presented has been assembled from suggestions contributed in informal conferences of a group from the editorial staffs of certain Boston publishers. The contributors are Hanson Webster (Houghton Mifflin Company), B. R. Buckingham (Ginn and Company), J. W. Sherman (Little, Brown and Company), Trentwell White and Elliott Blackiston (Lothrop, Lee, and Shepard Company), E. B. Blackburne (Benj. H. Sanborn and Company), C. T. Crowther and the writer (D. C. Heath and Company). The publishing firms mentioned will be glad to co-operate with accredited representatives of universities or other institutions of research who care to undertake any of the proposed investigations.

Certainly, textbook publishers would welcome advance information of the demise of their business! Possibly reforms could be proposed to save what is valuable in the textbook idea; but publishers would like to have facts, not opinions.

For purposes of investigation this problem could be restated as a series of part problems: Is the use of the textbook declining or likely to decline? If so, for what reasons? In what types of schools, in what school grades, and in what subjects? What forms of learning are used as substitutes for the textbook? With what success?

This problem is allied with those next to be described.

2. *Is It Advantageous To Replace a Single Set of One Textbook with Several Sets of Different Textbooks?*

In primary reading it would seem possible to provide a broader basis of reading if, to take an example, a class of forty pupils were equipped with eight copies each of five different first readers instead of forty copies of one first reader. To allow for various contingencies, there would probably have to be, say, ten copies rather than eight of the five readers; nevertheless, the cost would be approximately the same. Obviously, such a plan involves certain disadvantages in the handling of the class as a whole. An experiment could be set up to weigh the advantages and the disadvantages of diversity of textbooks.

This problem can be studied in several variations. To take another example, a class in history might be supplied with six copies each of six well-known history textbooks instead of thirty-six copies of a single book. The well-known devices of the socialized recitation commonly demand the use by committees or by individuals of materials from which reports are made on the topics being studied. When these materials are limited to those prepared by scholars for adults, they frequently prove too difficult, the young researcher is brought to a sickening dampening of his enthusiasm for this mode of learning, and the progress of the class as a whole is unsatisfactory. It might be worth investigating whether the provision of sets of textbooks in place of encyclopedias and other references designed for adults would not obviate this difficulty and whether the net result would not then be more satisfactory than that afforded by the study of a single textbook by all pupils.

3. *What Is the Extent and the Nature of the Demand for Master Copies of Material To Be Reproduced by Duplicating Devices?*

This problem is primarily a fact-finding rather than an experimental problem. The things that might be discovered are: How widespread is this demand? For what sorts of material and for what grades is such material desired? How much are school people willing to pay for master copies? Related questions of importance are: What bearing has the copyright law on this matter? How could the use of a copyrighted master copy be controlled?

It is obvious that the publishers, who, quite properly, have been striving to get school men to respect the copyright law, would, in a sense, be inviting them to break this law if they went into the business of selling master copies of classroom material. At present the publication of master copies appears to be limited to the efforts of manufacturers of duplicating machines to induce school people to purchase their machines by selling prepared materials for the manufacture of workbooks.

4. *What Are the Merits—Quality of Material and Cost per Word Being Considered—of the Very Cheap, Ten-Cent-Store Type of Books as Compared with Standard Textbooks?*

In some quarters there appears a tendency to purchase ultra-cheap books for school use or to criticize the textbook publisher for not supplying equally cheap books. The study of this situation presents a problem primarily clerical, rather than experimental, in nature. The essential question would be: What, after all, do you get for ten cents? What is the cost of one of these cheap books when computed on a cost-per-word basis? How well are the vocabulary and the sentence structure in them fitted to the age and the grade of the children for whom the books are bought? What is the pedagogical quality of the material? There might also be studied the conditions that prevent textbook publishers from offering books at similar prices.

5. *Why Are School Administrators Averse to Buying Elementary-School Books That Deviate from the Format of the Typical Textbook?*

There are published by trade publishers numerous juvenile books that differ in format (width of margin, page size, color of binding,

etc.) from the typical textbook. It is true that these books are usually higher in price than the school textbook, but, even when the price is made identical, there appears considerable resistance to the purchase of these books—so much so that the trade-book publisher usually has to prepare a "textbook edition" or sell the textbook rights to a textbook publisher. The textbook edition is then commonly printed from the same plates as the trade edition. This process is wasteful of time and money. A study of the reasons controlling the prospective school purchaser would be instructive.

Since the outstanding difference between the two editions seems to lie in mere physical size, the primary problem to be studied is: Why do school people so often refuse to buy a book if its dimensions differ from those of standard schoolbooks?

This problem has several secondary ramifications that might be pursued. For example, the typical textbook "story" for beginners in reading is essentially "incidental" in character, whereas the typical trade book seems, with good success, to feature the "plot-yarn" type of story, that is, a more extended story with a purpose and some dramatic flavor. Again, the typical schoolbook story apparently is regarded as pedagogically useless by some school people if it is not fortified by "questions on the text," "exercises," "objective tests," and the like at the end of every story. Are these pedagogical trimmings as valuable as they are thought to be?

6. *What Is the Validity, if Any, of the Increasing Refusal of the Schools To Buy Textbooks Bearing a Copyright Date More than a Few Years Old?*

A university professor of education to whom I described recently the trials of authors, editors, and publishers occasioned by the refusal of many school officials even to look at a textbook more than five years old, was dumbfounded at this situation. Some of the readers of this article may be equally surprised. Truly, the situation is nothing short of ridiculous. If I had space, I could show how it adds decidedly to the cost of textbooks with no compensating return, how it leads to silly subterfuges to secure fresh copyrights, how it often displaces perfectly good books by inferior ones, how it saps the energies of our best textbook-writers. I cannot forbear citing the classic case of the purchasing agent of a large city school system who

returned to the publisher a shipment of Professor George Herbert Palmer's translation of the *Odyssey* as unacceptable because the copyright date was more than five years old!

The publishers may have been originally responsible for this situation. Whether they were or not, it is now the school officials who turn on the publisher and demand always the "very latest" textbook.

It is not necessary to outline an investigation of this problem. Obviously, there should be a study of textbooks in different subject-matter fields and for different school grades; it should be determined in what subjects our knowledge of content or of method advances so rapidly as to render textbooks obsolete in any given number of years; and it should also be determined whether authors and publishers do or do not meet these advances without any urging from the schools and, if so, by what methods.

7. *In What Specific Respects Are Textbooks Too Difficult for the Learner? If Vocabulary and Style Are Primary Considerations, How Are the Difficulties These Present Best Determined and Best Obviated?*

About once in a dog's age (it has happened once in my editorial career) complaint is made that a textbook is too easy for the grade for which it is designed. Very common are complaints that a textbook is too difficult. Whether justifiably or not, the pressure for simplification seems steadily to increase.

Some authors and publishers have seemed to think that the checking of the vocabulary of a textbook against a published word list meets the difficulty. Experience, however, shows clearly that difficulties of style, particularly of sentence structure, must also receive careful consideration—witness the Winnetka Chart for Determining Grade Placement of Children's Books. It would appear that the possibilities of constructive experimentation in this field have not been exhausted. One obvious method of procedure would be to work directly with individual pupils and to discover from them just what statements presented difficulty and just how these statements could be reconstructed to meet the difficulty.

There is an interesting ancillary study that ought to be made. The number of words known by readers of different ages indicates that, on the average, a child must add to his vocabulary two words every day of his school life. Query: How is he to add these two words a

day if authors of textbooks must carefully avoid ever using a word he doesn't know? Again, if they are not to avoid such usage, what is the best method of introducing the new words? You see, the problem is the reverse of that of the dentist; instead of painless extraction, we want to accomplish painless insertion!

In any event, it is high time we eradicated from the minds of teachers the naïve notion that a statement to the effect that a given textbook has been checked against a given vocabulary list automatically guarantees the fitness of that book for use in a given grade.

8. *Can the Tentative Conclusions Reached in the Investigations of Certain Boston Publishers Regarding Optimal Sizes of Type and Leading in Grades I and II be Confirmed in Higher Grades?*

In 1931 B. R. Buckingham reported the results of an investigation,[1] undertaken jointly by D. C. Heath and Company, Houghton Mifflin Company, and Ginn and Company, to determine under classroom conditions the best size of type and the best leading for books read at the end of Grade I. Later on the same publishers, together with the American Book Company, undertook a similar investigation in Grade II. Without going into details, it may be said that these two investigations had similar outcomes and that both of them indicated strongly the merit of twelve-point type with three or four points of leading—a type decidedly smaller than that commonly used in primary-grade books. These results, if deemed valid, have much significance for textbook-making because they mean that much more reading material could be supplied for a given expenditure of money and that pupils could, practically from the start of their reading career, adjust their eye-movements and perception of word forms to a visual presentation that could be kept before them with little change in their elementary-school days. The publishers would welcome further studies of the same sort in Grades III and IV at least.

9. *What Is the Pedagogical Value of Illustrations, Especially of Colored Illustrations, in School Textbooks?*

Illustrations in schoolbooks are made by a variety of technical processes and in a variety of modes: halftones of photographs, line

[1] B. R. Buckingham, "New Data on the Typography of Textbooks," *The Textbook in American Education*, pp. 93–125. Thirtieth Yearbook of the National Society for the Study of Education, Part II. Bloomington, Illinois: Public School Publishing Co., 1931.

drawings, cartoons, wax cuts, charts, maps, and color cuts in two, three, or four colors (solid colors or tints of various sorts). To use any one of these forms of illustration adds to the expense of manufacture; hence, since textbooks, in practice, have to be built to meet a price, every illustration reduces the amount of verbal material that can be supplied. Thus, illustrations present a perennial problem.

It can be accepted as a sound general principle that any illustration which adds to the reader's understanding of the text is of pedagogical value and is presumptively a justifiable element in textbook construction. But what of illustrations that are inserted to "dress up" the book or that have only a dubious value as aids to learning? It is at this point that the publishers would welcome an experimental study. To make the problem concrete, I shall refer to the use of color.

In the last ten years the demand for colored illustrations has increased in persistency and widened in comprehensiveness. The use of color in a primer is an obvious and a familiar step to increase the attractiveness of the book to the beginner in reading. But now the schools demand (and the publishers try to meet the demand) that color be added to readers for higher grades and to textbooks in elementary English, in history, and even in spelling and arithmetic. Many school officials have become indoctrinated with the conviction that a textbook without colored illustrations is *ipso facto* inferior. No one has established this contention by experimental evidence. Moreover, the school officials do not seem to understand that every illustration reduces the amount of text that can be sold for a given figure. To be more specific, D. C. Heath and Company figure that, if the single added color (orange) had been omitted (leaving only black-and-white illustrations) from one of our recent elementary-school arithmetics, the money thus saved could have added 64 pages of text, or about 700 arithmetical problems. Which would be more effective for acquiring knowledge and skill in arithmetic—33 orange-tinted illustrations or 700 arithmetical problems?

If it is certain that the color is pedagogically valuable, the problem merely breaks up into a series of problems: In what books is color valuable? In what grades? How many colored cuts are needed to gain the desired pedagogical value? What colors are thus effective?

Is the child's aesthetic taste improved, as well as his insight into arithmetic or reading, by contemplating purple cows against a background of Persian-orange sky? Personally I feel like Gelett Burgess: "I never saw a purple cow; I never hope to see one."

10. *What Do the Schools Really Want for Indexes in Textbooks?*

The problem raised by the index is somewhat analogous to that presented by colored illustrations. The textbook (except very elementary and simple books) must have an index or it will not be purchased, but no one seems clear what pedagogical value is extracted from this index. In this situation the publisher is tempted to do what one might expect; he supplies what goes for an index, but he jams it into whatever pages are left to permit the book to come out "even forms" on the press, uses as small type as he dares, reduces a card catalogue of eleven hundred entries to one of seven hundred, leaves out cross-references and diacritical marks, uses the most compact form of page citations, and perhaps saves additional money by letting the author make an index that should have been properly done by an experienced indexer. (Making a good index to a high-school history recently published by D. C. Heath and Company kept an experienced indexer busy for eighty-two hours.)

We think a distinct improvement could be made in indexes if the schools would really pay for them and use them. We would like to have a study made showing what use is at present actually made of indexes in given subjects and in given grades and whether the considerable cost of making a first-class index (which perhaps should include a statement of its purpose, content, and value, and of how the pupil could use it) would be worth while. Obviously, if learners make only casual use of an index, it is better to put time and effort into improving the text rather than into improving the index.

As I said at the start, the publishers whose ideas are embodied in this paper would be glad to co-operate in any of the investigations they have suggested. We editors believe these problems are good problems; we ask you to "come over into Macedonia and help us."

# AN EVALUATION OF THE INTEGRATED CURRICULUM IN THE UPPER GRADES

J. WAYNE WRIGHTSTONE
Teachers College, Columbia University

## INTRODUCTION

Many teachers and school administrators who have adopted the newer-type practices of a unified curriculum for the lower primary grades maintain that these practices are not feasible for the upper elementary grades. Pupils at the fourth-, the fifth-, and the sixth-grade levels, according to this theory, should work with many independent studies in order to increase their growing powers in the various areas of school work. Proponents of this theory maintain that arithmetic, language, history, geography, science, art, and other subjects, instead of evolving from a center of interest or unit of work, should tend to become separate lines of activity.

A number of forward-looking, progressive schools have experimented with integration of the special studies, or subjects, around centers of interest. The standard-type schools, on the other hand, have continued to build the curriculum around lessons from textbooks and prescribed courses of study. For evaluating the two types of practices, the writer selected for investigation several public schools representing both types. A study of their practices was made, and equated groups of pupils were given various achievement tests.

## STANDARD-TYPE SCHOOL PRACTICES

In the standard-type public schools selected for this study, a type of practice is in vogue which, on account of its former widespread reign of popularity, requires little explanation. Lessons are assigned, and the school day is divided into scheduled periods to which the study and recitation of each lesson is limited. Courses of study follow closely the arrangement of topics in basic textbooks in reading, arithmetic, language, spelling, history, geography, and penmanship. In this type of school the pupils have little or no influence either in

suggesting or in developing the curriculum. With few deviations the teachers follow prescribed courses of study. Few or no attempts are made by the teachers or the supervisory staff to correlate or to integrate the separate subjects of instruction. During a recitation the teacher's main responsibilities are to secure an estimate of the pupil's mastery of the skills and knowledges in the assigned subject matter, to do as much remedial teaching as possible, and to prepare pupils for new types of subject matter.

### NEW-TYPE SCHOOL PRACTICES

A large part of the curriculum in the upper grades of the new-type schools is integrated around certain centers of interest and activity, but, following the expanding interests and activities of the primary-grade pupils, the curriculum provides also for extra-unit interests and activities. In the upper elementary grades the subjects, such as reading, language, and the arts, receive major emphasis as integrated parts of a unit and minor emphasis as separate individualized studies.

With its integrated and extra-unit interests and activities, the new curriculum may be assumed to have two main aspects: (1) individualized achievement in skills and (2) group and creative activities, usually evolving from some central theme, or topic. In the typical centers of interest, or units, there is an interrelation between the so-called "tools" and "skills" of learning and the creative group activities. Many of the instrumental skills, such as reading, writing, number, and speaking, grow, particularly in elementary social studies and natural sciences, from the planning and the developing of group enterprises.

The teacher's rôle is to introduce units and topics which will stimulate and guide the pupils' interests and powers and which will contribute to the individual's personal and social development. Such guidance is usually provided by organizing the children's questions into a course of study and then assisting the pupils in solving their problems by investigation and research. Trips to libraries and to museums, as well as reading books and interviewing persons, are a few of the means which the new-type schools employ for investigation and research purposes. By guiding pupil discussion and investigation, the teacher provides for integration of the various subjects.

The daily program of activities, not being governed by a fixed schedule, is changed from day to day by the joint planning of teacher and class. Usually the day is divided into large blocks of activities. Half the time of the class is devoted to development of creative and group activities around a unit or topic, and the remainder is devoted to extra-unit activities in the skill subjects, special work in the arts, or personal interests and ventures.

### COMPARISON OF PUPILS IN SCHOOLS OF BOTH TYPES

In the new-type and the standard-type public schools selected for appraisal in this study, teaching conditions were practically identical. The training and the experience of the teachers in the schools of both types were virtually on a par, and library and other school facilities were the same.

TABLE I

AVERAGE INTELLIGENCE QUOTIENT, CHRONOLOGICAL AGE, AND SCORE ON SOCIO-ECONOMIC STATUS OF 184 PUPILS IN NEW-TYPE AND 184 PUPILS IN STANDARD-TYPE SCHOOLS

| Schools | Average Score | Standard Deviation |
|---|---|---|
| Intelligence quotient: | | |
| New-type | 108.4 | 12.18 |
| Standard-type | 108.0 | 12.27 |
| Chronological age (in months): | | |
| New-type | 133.66 | 15.12 |
| Standard-type | 134.98 | 15.36 |
| Socio-economic status (Sims score): | | |
| New-type | 19.92 | 8.30 |
| Standard-type | 19.82 | 8.80 |

For comparing the outcomes of new-type and standard-type practices, pupils of various racial groups and economic backgrounds were included in the number of pupils selected. The pupils were equated on the bases of intelligence, chronological age, and socio-economic status, with the results shown in Table I. Both groups of pupils had an average intelligence quotient (on the National Intelligence Test) of about 108, with a standard deviation of approximately 12.2. In chronological age the two groups were almost equivalent. In terms of the Sims score for socio-economic status, both groups scored ap-

proximately 19.8, and the standard deviations were 8.30 for the new-type, and 8.80 for the standard-type, schools.

For appraising the intellectual factors of fourth-, fifth-, and sixth-grade pupils in both types of schools, the New Stanford Achievement Tests, Form W, in reading, language, and arithmetic were administered. The average scores attained in these three tests by equated pupils in both types of schools are shown in Table II. The results of

TABLE II

AVERAGE SCORE ON NEW STANFORD ACHIEVEMENT TESTS IN READING, LANGUAGE, AND ARITHMETIC MADE BY PUPILS IN GRADES IV–VI IN NEW-TYPE AND STANDARD-TYPE SCHOOLS

| Schools | Number of Pupils | Average Score | Standard Deviation | Ratio of Difference to Standard Error of Difference | Number of Chances in 1,000 that Difference Is Real |
|---|---|---|---|---|---|
| Reading: | | | | | |
| New-type | 178 | 76.03 | 15.60 | ..... | ..... |
| Standard-type | 178 | 74.40 | 15.98 | ..... | ..... |
| Difference | ..... | 1.63 | 1.67* | 0.98 | 537 |
| Language: | | | | | |
| New-type | 93 | 73.53 | 17.06 | ..... | ..... |
| Standard-type | 93 | 67.18 | 22.50 | ..... | ..... |
| Difference | ..... | 6.35 | 2.93* | 2.17 | 985 |
| Arithmetic: | | | | | |
| New-type | 181 | 74.81 | 14.31 | ..... | ..... |
| Standard-type | 181 | 73.12 | 14.51 | ..... | ..... |
| Difference | ..... | 1.69 | 1.52* | 1.11 | 866 |

* Standard error.

the achievement tests in reading, language, and arithmetic provide a tentative answer to the question of comparative attainment in the instrumental skills by pupils in the upper elementary grades under new-type and standard-type practices. In these various academic skills the pupils in the new-type schools were slightly superior in achievement to the pupils in the standard-type schools. In no area of instrumental skills, however, was this superiority statistically significant. These results would seem to indicate that, with similar

types of pupils and situations, the two types of school practices would result in no essential differences in achievement.

### IMPLICATIONS OF RESULTS

Only about 180 pupils could be included in the final tabulation of results. Such a sampling, for a variety of reasons, is too small to permit the formulation of final conclusions. Certain hypotheses are, however, implicit in the test results.

One such hypothesis is that the newer practices are as adequate a medium as are the standard practices for the acquisition of skills and habits in the instrumental subjects of reading, language, and arithmetic. Not only do the new-type schools, by the use of individualized diagnostic and remedial materials, provide the children with systematic instruction in the skills, but the use of these materials is stimulated by, and correlated with, the development of meaningful pupil activities, usually in units of work.

A second hypothesis implicit in the test results is that the central units or topics of work of the new-type schools do not necessarily detract from achievement in instrumental skills in the academic areas of the curriculum. If the teacher guides with wisdom the pupils' interests and activities, a progressive development in reading, language, and similar skills ensues. Although the new-type schools devote less time than do the standard-type schools to actual drill on academic skills and habits, the newer practices, through correlated activities, provide for an equal mastery and understanding of these skills.

# AN ATTEMPT TO EVALUATE THE THREAT OF FAILURE AS A FACTOR IN ACHIEVEMENT

HENRY J. OTTO
W. K. Kellogg Foundation, Battle Creek, Michigan
ERNEST O. MELBY
Northwestern University

The problem of pupil failure or non-promotion in school has been a crucial issue in school administration throughout the history of elementary education in the United States. Numerous statistical studies and a few experimental investigations regarding pupil failure have been made.[1] Administrators and teachers everywhere have struggled to reduce the amount of non-promotion, and in some school systems the percentage of failure has been reduced to less than two or three and in a few cases almost to zero. Many and varied methods have been used in efforts to lower the percentage of children required to repeat the grade at the end of the school term. One of the most disturbing elements in the general move to reduce failures has been the fear that the quality of school work would depreciate and that the standards of achievement of the schools would drop to scandalous depths if the failure rate should approach zero. School workers were perfectly willing that the percentage of failure should be lowered, but they were equally convinced that the practice of failing *some* pupils must be continued as an insurance against low standards of achievement. In other words, the threat of failure must be retained to guarantee that every child will keep his shoulder to the wheel and will work to capacity. The threat of failure is thus deemed essential as a motivating device in elementary education.

There are some educational workers, however, who believe that it is not necessary to hold over children's heads the whip hand of failure in order to bring pupils to achieve and to achieve willingly and to capacity. It is the contention of these workers that educa-

[1] A summary of some of the important recent studies may be found in Henry J. Otto, "Pupil Failure as an Administrative Device in Elementary Education," *Elementary School Journal*, XXXIV (April, 1934), 576–89.

tional science has progressed far enough so that there are many ways of handling and motivating children which bring better results and which are more conducive to mental health of both teacher and pupil than is the threat of failure. The study reported in this article was an effort to discover whether pupils threatened with non-promotion throughout the semester if they did not attain desirable achievement levels would make greater, less, or the same academic progress, as measured by standardized achievement tests, as did pupils who were told at the beginning of the semester that they would all be in the next higher grade in the following semester. The study was conducted in four typical school systems of northern Illinois[1] during the second semester of 1933–34 and involved 352 pupils and 18 classroom teachers. One hundred and ninety-two pupils in Grade II A and 160 in Grade V A remained in the same school and class throughout the semester so that beginning and end tests could be given to them. Eight sections or classes of pupils in Grade II A were taught by eight teachers, and ten sections of pupils in Grade V A were taught by ten teachers.

In organizing the experiment each superintendent selected two teachers of Grade II A and two teachers of Grade V A who in his judgment were among the most competent of his teachers and who were interested in participating in the investigation. In West Aurora Superintendent Smith found it opportune to include six sections of Grade V A which had been classified into X, Y, and Z divisions. The classes used in the study were taken just as they were found in the typical school situation; that is, the organization of classes and the classification of pupils normally found in a particular school were not disturbed. It was thought that similar groups of children in the same grade would not reveal a sufficient number of statistically significant differences to influence the study. The accuracy of this supposition is borne out in the data which follow. The entire study was conducted in such a way as not to disturb the routine of administration in the least. For this reason teachers were not rotated.

[1] This study was made possible through the co-operation of Superintendents Frank A. Jensen of Rockford, Theodore Saam of Elgin, J. H. Smith of West Aurora, J. R. Skiles of Evanston, and second- and fifth-grade teachers selected by the superintendents in those school systems.

It was thought that the factor of teacher variation would be largely overcome by having four control-group and four experimental-group teachers in each grade.

At the beginning of the second semester the Kuhlmann-Anderson Intelligence Tests and the New Stanford Achievement Test, Primary Examination, were given to all children in Grade II A who were to be included in the study. The same intelligence test and the Unit Scales of Attainment were given to all pupils in Grade V A. Different forms of the two achievement tests were given before the close of the semester. In each of the four school systems one second-grade class and one fifth-grade class were designated as experimental groups, and one class in each of the two grades was designated as a control group, except in West Aurora as already explained.

Each teacher of an experimental group told her pupils at the beginning of the semester and several times during the semester that they would all be in the next higher grade the following term. Teachers were instructed (in most cases orally and by written statement by the writers) to make these announcements, not as sudden thunderbolts, but as statements of encouragement, and to make them so clearly that no pupil would lack a full understanding of the fact that there were to be no failures in his class during the term.

Each teacher of a control group informed her pupils at the beginning of the semester and several times during the semester that anyone who did not work hard and do well would have to repeat the grade. As in the experimental groups, the announcements in the control groups were not given in such an abrupt way that all or some of the pupils would become frightened about a sudden change in the academic requirements of the school; yet the announcements were made with sufficient clarity that every pupil would understand the proposition put before him. Doubtless in many instances the situation in the control groups was no different from the situation during any other semester with a particular teacher nor different from the setting in the majority of the elementary-school classrooms in the country.

Except for these announcements in the experimental and the control groups, no changes were made in the teaching situation. Each teacher was urged to carry on her teaching exactly as she would have

done if no experiment were under way. Control-group teachers kept before their pupils the possibility of failure if good work were not done, while experimental-group teachers kept pupils aware of the fact that in the following term they would all be in the next higher grade. Obviously, experimental-group teachers were denied the use of the threat of failure as a motivating device.

TABLE I

COMPARISON OF PUPILS IN GRADES II A AND V A IN EXPERIMENTAL GROUP WHO WORKED WITH NO THREAT OF FAILURE AND CONTROL GROUP WITH WHOM THREAT OF FAILURE WAS USED

| | Experimental Group | Control Group | Difference | Standard Error of Difference | Critical Ratio |
|---|---|---|---|---|---|
| Grade II A: | | | | | |
| Number of pupils | 93 | 99 | ..... | ..... | ..... |
| Mean chronological age (in months) | 92.5 | 91.4 | 1.1 | 0.7 | 1.57 |
| Mean mental age (in months) | 96.4 | 96.5 | − .1 | .8 | .13 |
| Mean intelligence quotient | 104.4 | 105.9 | −1.5 | 1.2 | 1.25 |
| Mean initial educational age (in months) | 99.0 | 100.3 | −1.3 | 1.4 | .93 |
| Mean final educational age (in months) | 107.0 | 107.2 | − .2 | 1.1 | .18 |
| Mean gain | 8.0 | 6.9 | 1.1 | .8 | 1.38 |
| Grade V A: | | | | | |
| Number of pupils | 73 | 87 | ..... | ..... | ..... |
| Mean chronological age (in months) | 130.7 | 131.0 | − .3 | 1.6 | .19 |
| Mean mental age (in months) | 136.0 | 134.6 | 1.4 | 1.6 | .88 |
| Mean intelligence quotient | 104.7 | 103.4 | 1.3 | 1.9 | .68 |
| Mean initial educational age (in months) | 144.2 | 138.6 | 5.6 | 1.9 | 2.95* |
| Mean final educational age (in months) | 150.4 | 144.1 | 6.3 | 2.1 | 3.00* |
| Mean gain | 6.2 | 5.5 | 0.7 | 1.3 | 0.54 |

* Statistically significant differences.

The data for the experimental and the control groups are summarized in Table I. It will be noted that there are no statistically significant differences for Grade II A. In this grade the mean gain of the experimental group is 1.1 months greater than the gain of the control group. In Grade V A the initial and the final educational ages showed statistically significant differences in favor of the experimental group. However, the difference in the mean

gain is only 0.7 of a month, and this gain is in favor of the experimental group. In other words, in so far as these data show, there is no difference between the achievement of children (taken as groups) who have been threatened with failure and that of children who have been told at the beginning of the semester that they would all be promoted to the next higher grade at the end of the term.

In an effort to discover whether the threat of failure as a factor in pupil achievement might operate differently for children of different levels of intelligence, the children in Grade II A were divided into three groups: (1) pupils with intelligence quotients of less than 90, (2) pupils with intelligence quotients between 90 and 110, inclusive, and (3) pupils with intelligence quotients above 110. Within each intelligence group the data for the experimental and the control pupils were compared. In no instance were the differences statistically significant. As the number of second-grade children with intelligence quotients below 90 was small, the data for this group probably have little reliability, but the middle and the upper groups contained 140 and 46 pupils, respectively.

The children in Grade V A were similarly reclassified into three intelligence groups. The number of cases in the groups were as follows: intelligence quotients of less than 90, twenty-one pupils; intelligence quotients between 90 and 110, ninety-one pupils; intelligence quotients above 110, forty-eight pupils. Within each intelligence group the experimental and the control groups were compared, and no statistically significant differences were found in the final educational age and the mean gain of any of the intelligence groups. Such minor differences as existed were in favor of the experimental groups.

As a partial index to the way in which the two promotion policies represented in this study might operate under different teachers, the experimental and the control groups in each city were compared. There were eight teachers of Grade II A and ten teachers of Grade V A for which such comparisons could be made, four comparisons in Grade II A and five comparisons in Grade V A thus being possible. There were no statistically significant differences in the mean gains in the four comparisons made for Grade II A; in three of the four comparisons the minor differences existing were in favor of the ex-

perimental groups. For Grade V A there were no statistically significant differences in the mean gains in any of the five pairs of groups which were compared; in three out of the five comparisons the small differences found were in favor of the experimental groups. One might reasonably conclude, therefore, that in the total experiment variations due to teachers were not of sufficient importance in any one or a few classrooms to distort the general findings of the study.

At the end of the semester a one-page questionnaire was submitted to the participating teachers, on which they were asked to give their reactions to certain aspects of the study. Six teachers in each grade returned the inquiry blank. The first question was: "Did you notice any changes in the reactions, attitudes, or application of pupils which you believe are due to the conditions imposed by the experiment? If so, explain fully." The following answers to this question were received.

Experimental-Group Teachers in Grade II A

1. No.
2. Perhaps the realization that they were working toward a higher goal made them put more conscious effort into their work. I think there was a normal desire to improve, taking the group as a whole.
3. Yes. There seemed to be a little slacking up on work by a few, but, when they were reminded that the work in Grade III would be easier if certain work were accomplished in Grade II A, there was a better spirit of cooperation. A happier and more satisfied attitude toward the work was noticed.

Experimental-Group Teachers in Grade V A

1. No.
2. Yes. There was a general slump in attitude and quality of work. It was difficult to arouse a feeling of pride in work well done. It was necessary to do a great deal of checking up to bring in completed assignments and neat papers.
3. I have in the past had the experience of an "I don't care, I'm not going to pass anyway" idea. I have encountered no such attitude at the end of this semester.

Control-Group Teachers in Grade II A

1. I really did not notice any definite reaction except possibly the real dislike of work in some children.
2. No change was noticed because, being in the control group, the conditions before and during the experiment were practically the same.

3. The children at all times seemed fully aware of the fact that they must reach certain standards in order to be promoted.

Control-Group Teachers in Grade V A

1. No.
2. There was a slightly greater application on the part of some pupils. There was an attempt to bring subjects in which they were weak up to a higher standard, but children are always trying to improve in those subjects for daily lessons.
3. In most cases I think the pupil worked harder as many asked for home work.

The second question asked the teachers read as follows: "Did pupils seem to work harder, about as hard, or less hard during the experiment than groups ordinarily do, according to your past experience?" The following replies were received to this question.

Experimental-Group Teachers in Grade II A

1. About as hard as usually.
2. I thought my pupils worked about as hard as they do ordinarily.
3. About as hard.

Experimental-Group Teachers in Grade V A

1. Just as hard.
2. Less hard unless it was a subject they liked.
3. I could see no difference.

Control-Group Teachers in Grade II A

1. Children seemed to work harder.
2. I think they may have worked a trifle harder when spurred on by a threat of failure.
3. The pupils seemed to work about as hard as usual during the experiment.

Control-Group Teachers in Grade V A

1. About the same in some cases, while in others much extra work was done at home and in the morning before school.
2. About as hard.
3. About as hard.

A third question asked teachers was: "After having spent the semester co-operating in this experiment, what is your opinion as to the desirability of conducting an experiment of this kind?" Typical answers to this question are as follows:

1. I think an experiment of this kind would have to extend over a period of years in order to be of value.

2. I liked the close follow-up work in testing which the experiment afforded, but I am not sure it stimulated the group to greater effort solely because of the emphasis on promotion.

3. It has been extremely interesting, and I feel that it will help in solving some of the problems about non-promotion which confront the elementary school.

4. Changing the control group in Grade II A to an experimental group next semester should give some interesting reactions, especially from four pupils who so far in their school life have been "jacked up" quite persistently by their teachers.

5. I don't see that it changed the work in the room.

6. I feel it is an excellent experiment.

7. Very desirable.

8. The child does not expect any drastic change from his past experience. If he has been allowed to go on before when he was not as good as the rest of the group, he thinks he may do so again.

Teachers were asked a fourth question: "Do you think the basic character of this experiment has sufficient significance for education and pupil welfare so that the study ought to be expanded and developed along several unexplored lines?" Nine of the twelve teachers answered in the affirmative, many of them giving excellent suggestions for steps which should be taken next in an effort to solve the many related problems suggested by the present study.

## SUMMARY

This investigation represents a preliminary effort to evaluate the effect of the threat of failure as a factor in the achievement of children. Within the limited range of this study it seems fair to conclude that children who are told at the beginning of the semester that all will be in the following grade the next term do as well on a comprehensive achievement test as children who throughout the semester are reminded that they must do good work or suffer non-promotion. This generalization applies about equally well to the groups in Grade II A as to the groups in Grade V A. In general, the statements of experimental-group teachers are to the effect that the elimination of the threat of failure did not affect materially, either favorably or unfavorably, the quality of work, the attitudes, or the application of the pupils. These opinions of teachers are supported

by the test results. Consequently, if the line of research represented here can be extended and expanded, there may be hope that within a short time the elementary school can be liberated from the undesirable aspects of non-promotion.

It should be clear to any reader that the study reported herein is only a preliminary step and that the experiment has many limitations. There are numerous questions raised by a project of this kind. What, for example, will be the ultimate effect on the attitudes of children toward success and failure if the policy of 100 per cent promotion is followed throughout a child's elementary-school career? Will six years in the absence of the threat of failure result in a total educational growth by the end of Grade VI as great as the growth attained under the constant pressure of the threat of failure? What differences will there be in the mental health, personality development, and social adjustment of children? How will children who have been permitted to go on regularly from grade to grade in spite of low attainment fit into the academic activities of typical achievers in the intermediate grades? Do teachers now have, or can they be taught, motivating devices other than the threat of failure which will cause each child to achieve to capacity? Is the threat of failure more useful and valuable in higher than in lower grades? What is the relation between promotion policies and report cards? These and many other questions must be investigated more fully before the policy of non-promotion can be generally eliminated in public-school practice.

# THE SUPPORT OF FRESH-AIR CLASSES DURING THE ECONOMIC DEPRESSION

J. E. WALLACE WALLIN
Delaware Department of Public Instruction and the
Wilmington Public Schools

In connection with an attempt to establish fresh-air or health-restoration classes for malnourished, anemic, tubercular contact, and delicate children in the public schools of Wilmington, Delaware, a questionnaire was addressed in May, 1934, to the superintendents of schools in twenty-nine cities in the Middle West, the East, and the South with populations varying from about seventy thousand to seven million. The purpose was to secure up-to-date information with regard to practices in maintaining fresh-air classes in representative cities of varying populations in different sections of the country. *The Biennial Survey of Education in the United States: 1930–1932*, issued by the United States Office of Education, indicates that all these school systems have classes for "delicate children."

Replies were received from twenty-five school systems. No replies were received from Cambridge, Massachusetts; Harrisburg, Pennsylvania; Rochester, New York; or Providence, Rhode Island. Of the others, Irvington, New Jersey; Evansville, Indiana; Fall River, Massachusetts; and Cincinnati, Ohio, replied that they have no fresh-air or open-air classes. The replies did not indicate whether such classes had been abandoned in these cities, except the reply from Evansville. There efforts are made to stress health work in every classroom. The program includes adequate ventilation of all classrooms, serving milk-and-cracker lunches to all underfed indigent pupils and making these lunches available to any pupils who wish to purchase them, the prolongation of the noon recess for certain children in order that rest periods may be provided at home, the improvement of the home care of pupils through the co-operation of parent groups, and holding every teacher responsible for health-edu-

cation work and the adaptation of such work to the needs of her pupils.[1]

The replies to the questionnaire,[2] summarized in Tables I to III, supply valuable data on a number of questions of present-day interest to many boards of education. It is not necessary to rehearse all the facts contained in the tables. The tables speak for themselves and should be carefully studied. Comment will be confined to the practices in the payment of the cost of transportation for the pupils and in the financing of the lunches supplied in fresh-air classes, items of special interest during this period of drastic retrenchment of school expenditures.

The children's transportation cost, usually in streetcars, is defrayed when necessary by the boards of education in fourteen cities, namely, Philadelphia, Detroit, Cleveland, St. Louis, Toronto, Newark, Hartford, Springfield, Paterson, Albany, Erie, Reading, Allentown, and Niagara Falls. Co-operating agencies render this service in Washington, Norfolk, and Binghamton. In six cities carfare is not furnished, namely, New York, Baltimore (the classes in both of these cities are well distributed throughout the city), Richmond, Grand Rapids (carfare was previously allowed), South Bend, and Bayonne. It thus appears that 74 per cent of these cities find it necessary to supply carfare to some of the children transferred to fresh-air classes and that the cost of the transportation in 61 per cent of the cities is borne by the board of education.

Table III shows that in fifteen of the twenty-three cities the children do not pay for the lunches either in whole or in part. These cities include Detroit, Cleveland, Baltimore, Toronto, Washington, Newark, Hartford, Springfield, Norfolk, Albany, Erie, Reading, Allentown, Bayonne, and Niagara Falls. The number is practically sixteen, as "not many" pay anything in Paterson. In New York City 2,540 out of 4,659 children in the fresh-air classes pay for their lunches. In Philadelphia about one-fourth pay part of the cost of their lunches. In St. Louis 25 per cent of the pupils pay in whole and

[1] Evansville, with a population of 102,249, spent in 1932–33, $15,500 for the education of "240 open-window-room pupils."

[2] Data have also been included from schools in Cleveland and Toronto, gathered during an inspection of the fresh-air classes in those schools.

TABLE I

DATA SECURED IN MAY, 1934, ON FRESH-AIR CLASSES CONDUCTED IN TWENTY-THREE CITIES

| City | Population | Number of Pupils in Fresh-Air Classes | Number of Pupils Enrolled in Each Fresh-Air Room | Number of Grades to a Fresh-Air Room | Transportation Cost |
|---|---|---|---|---|---|
| New York, N.Y. | 6,930,446 | 4,659 | 25 | Varies with number of classes in the district | None supplied |
| Philadelphia, Pa. | 1,950,961 | 454 | About 25 | Some ungraded, cover first 8 grades; usually no pupils below third and few above sixth; in some centers, 2 classes | Carfare is supplied by board of education to pupils who live too far to walk or who should not walk |
| Detroit, Mich. | 1,568,662 | Open-air, 1,180; open-window, 1,560; hospital, 224 | Open-air, 35; open-window, 28–30 | Open-air, 2 to 3; open-window, 2 to 8 (pupils recite in regular grades in science and literature) | Board of education furnishes carfare for pupils living beyond walking distance |
| Cleveland, Ohio | 900,429 | Open-window, 674* | ..... | Usually not over 3 | Board of education supplies carfare for pupils living 2 miles away. Pupils under 12 can secure streetcar transportation at 1¢ each way; those over 12 at 50¢ a week |
| St. Louis, Mo. | 821,960 | 296 | Average of 27 | About 2 to 4 | Board of education pays if distance exceeds a mile and a quarter |
| Baltimore, Md. | 804,874 | 398 | Maximum of 24 | 3 grades; Grades I–VI in 4 one-teacher classes | None supplied |

* During the school year 1932–33.

TABLE I—*Continued*

| City | Population | Number of Pupils in Fresh-Air Classes | Number of Pupils Enrolled in Each Fresh-Air Room | Number of Grades to a Fresh-Air Room | Transportation Cost |
|---|---|---|---|---|---|
| Toronto, Canada... | 521,893 | 90† | 3 teachers | ..... | 28 out of 90 pupils receive street-car fare from board of education |
| Washington, D.C..... | 486,869 | 21‡ | 21 | 6 | Parent-teachers' association |
| Newark, N.J. | 442,337 | 96§ | 25 | Grades I–VIII distributed in 4 classes | Carfare furnished when needed |
| Richmond, Va..... | 182,929 | 429 | 20 | 2 or 3; in future not over 2 | None supplied |
| Grand Rapids, Mich.. | 168,592 | 424 | 18 (in junior high schools) to 23–35 (in elementary schools) | Usually Grades III–VI; one junior high school with Grades VII–IX | None supplied |
| Hartford, Conn..... | 164,072 | 230 | Not over 30 | 1 | Board of education pays bus or streetcar fare |
| Springfield, Mass..... | 149,900 | 100 | 25 | Grades I–III and IV–VI | Supplied by city when living outside district containing classes |
| Paterson, N.J..... | 138,513 | 114 | 16-22 | 3 to 6 | Board of education pays for a few children |
| Norfolk, Va.. | 129,710 | 65 | About 20 | Ungraded | Federation of Home and School Leagues and Tuberculosis Association pay for some |
| Albany, N.Y. | 127,412 | 76 | 20 | ..... | Board of education pays carfare |

† This figure does not include the children in a forest school in a city park. A new open-air school is to replace the forest school.

‡ A fresh-air class for colored children. Washington also maintains health schools for white and colored tuberculous cases.

§ An open-air school for tuberculous children.

TABLE I—*Continued*

| City | Population | Number of Pupils in Fresh-Air Classes | Number of Pupils Enrolled in Each Fresh-Air Room | Number of Grades to a Fresh-Air Room | Transportation Cost |
|---|---|---|---|---|---|
| Erie, Pa..... | 115,967 | 42 | 17 in one; 25 in another | Grades II–IV in one; Grades V and VI in the other | Board of education pays for pupils who live too far to walk |
| Reading, Pa. | 111,171 | 40 | 20 | Grades II and III in one; Grades V and VI in the other | Board of education furnishes bus transportation for pupils who live too far to walk |
| South Bend, Ind..... | 104,193 | 150 | 50 | All grades | None supplied |
| Allentown, Pa..... | 92,563 | 64 | 40 in Grades I–IV; 24 in Grades V–VII | 4 in one; 3 in the other | Board of education supplies carfare for all |
| Bayonne, N.J..... | 88,979 | 37 | 15 in one; 22 in the other | Grades I–VII | None supplied |
| Binghamton, N.Y..... | 76,662 | 72 | 2½ teachers handle pupils in groups | ..... | $5.00 a month from a friend for indigents residing at a distance |
| Niagara Falls, N.Y..... | 75,460 | 64 | 19, 20, and 25 | Grades I–III; Grades I–IV; Grades IV and V | Board of education pays for pupils living at a distance and for some others on rainy days |

25–30 per cent in part. In Richmond practically none in the poorer sections contribute anything, while all from the better sections contribute from 50 per cent to 100 per cent of the cost. In Binghamton 10 per cent of the pupils pay all the cost, and 39 per cent pay part of the cost. In Grand Rapids and South Bend about a third contribute toward the cost of the lunches. It is apparent that in none of these cities do all the children pay for their lunches either in whole or in part. In only three cities do as many as approximately 50 per cent

TABLE II

DATA ON LUNCHES SERVED IN FRESH-AIR CLASSES IN TWENTY-THREE CITIES

| City | Per Pupil Cost of Lunches (in Cents) | | | | Agency Preparing and Serving Lunches |
|---|---|---|---|---|---|
| | Mid-Morning | Mid-Day | Mid-Afternoon | Total | |
| New York, N.Y. | 3 | 7 | None | 10 | School cafeteria |
| Philadelphia, Pa. | 5 | 14 | 5 | 24 | Nurse or cook assigned to class |
| Detroit, Mich. | ..... | ..... | ..... | 14 | Nurse or cook assigned to class |
| Cleveland, Ohio | * | * | * | ..... | Matrons and helpers assigned to classes in larger centers |
| St. Louis, Mo. | ..... | ..... | ..... | 15 | School cafeteria attached to open-air school |
| Baltimore, Md. | 2 | 7 | None | 9 | Cook assigned to class |
| Toronto, Canada | † | † | † | ..... | Two cooks assigned to classes |
| Washington, D.C. | 3 | ..... | 3 | 6 | Teacher |
| Newark, N.J. | ..... | ..... | ..... | 17 | Cook assigned to class |
| Richmond, Va. | 4 | 7–8 | None | 11–12 | Teacher |
| Grand Rapids, Mich. | 2‡ | 10 | 2‡ | 14 | Cafeteria in 3 schools; teacher with help of children in 11 schools |
| Hartford, Conn. | ..... | ..... | ..... | 14.5 | Cook assigned to class |
| Springfield, Mass. | ..... | ..... | ..... | 16 | Cook assigned to class |
| Paterson, N.J. | ..... | ..... | ..... | 21 | Teacher assisted by household-arts classes |
| Norfolk, Va. | ..... | ..... | ..... | ..... | Cafeteria and teacher |
| Albany, N.Y. | ..... | 9–11 | ..... | 9–11 | Cook assigned to class |
| Erie, Pa. | 4 | 14 | None | 18 | Cook assigned to class |
| Reading, Pa. | None | 13.8 | 3 | 16.8 | Cook assigned to class |
| South Bend, Ind. | 2 | 10 | None | 12 | School cafeteria |
| Allentown, Pa. | ..... | 10.5 | ..... | About 15 | Cook assigned to class |
| Bayonne, N.J. | 8–10 | 10–13 | 4–10 | 22–33 | Matron assigned to class |
| Binghamton, N.Y. | 3 | 5‡ | 1 | 9 | Nutritionist aided by pupils and teachers |
| Niagara Falls, N.Y. | 3–4 | 10–15 | 2–3 | 15–22 | Cook assigned to class |

* Cleveland supplies mid-morning, mid-day, and mid-afternoon lunches at cost of board of education.

† Toronto supplies mid-morning, mid-day, and mid-afternoon lunches at cost of the board of health.

‡ In addition children bring a sandwich from home.

## TABLE III

### AGENCIES DEFRAYING COST OF LUNCHES IN FRESH-AIR CLASSES IN TWENTY-THREE CITIES

| City | Board of Education | | Children Paying for Own Lunches | | Have Attempts Been Made To Require Children To Pay? | Aid Received from Co-operating Agencies |
|---|---|---|---|---|---|---|
| | For All | For Some | In Whole | In Part | | |
| New York, N.Y. | No | ..... | 2,540 | ..... | No | School and city relief funds to indigents |
| Philadelphia, Pa. | See last column | ..... | None | 25%* | No; do not have money | Public-School Health Fund (receives contributions from civic and fraternal organizations, milk dealers, and pupils throughout the schools) |
| Detroit, Mich. | Yes | ..... | None | None | ..... | ..... |
| Cleveland, Ohio | Yes | ..... | None | None | ..... | ..... |
| St. Louis, Mo. | See last column | ..... | 25% | 25–30% | No | Public-School Relief Fund (privately donated); Emergency Relief Fund (from board of education cafeteria surplus) |
| Baltimore, Md. | Yes | ..... | None | None | No | ..... |
| Toronto, Canada | No | ..... | None | None | ..... | Board of health |
| Washington, D.C. | No | No | None | None | No | Parent-teachers' association |
| Newark, N.J. | Yes | ..... | None | None | No | ..... |
| Richmond, Va. | No† | ..... | None | None in poor districts; in better districts pupils pay 50–100% of cost | No; unable to pay | Parent-teachers' association |

* The average amount paid by child is 3 cents a day.

† Except bread and milk to all.

TABLE III—*Continued*

| City | Board of Education | | Children Paying for Own Lunches | | Have Attempts Been Made To Require Children To Pay? | Aid Received from Co-operating Agencies |
|---|---|---|---|---|---|---|
| | For All | For Some | In Whole | In Part | | |
| Grand, Rapids, Mich. | No | No | About 33% | ..... | No | City tuberculosis clinic supplies mid-day lunches for indigents; Kent County Relief Commission supplies milk for some |
| Hartford, Conn..... | Yes | ..... | None | None | No | ..... |
| Springfield, Mass..... | Yes | ..... | None | None | No | ..... |
| Paterson, N.J..... | No‡ | Yes | Not many | ..... | No | ..... |
| Norfolk, Va. | No | No | None | None | No; are usually indigents | Home and School League; Tuberculosis Association |
| Albany, N.Y..... | Yes | ..... | None | None | No | ..... |
| Erie, Pa..... | Yes | ..... | None | None | No | ..... |
| Reading, Pa. | Yes | ..... | None | None | No | ..... |
| South Bend, Ind..... | No | ..... | 33% | None | Yes, but indigents cannot pay | Tuberculosis Association, Girl Reserve League, and an organization of young society women |
| Allentown, Pa..... | Yes | ..... | None | None | No | ..... |
| Bayonne, N.J..... | Yes | ..... | None | None | Yes, but parents cannot pay because of general conditions | ..... |
| Binghamton, N.Y..... | No | ..... | 10% | 39% | No | Exchange Club (food for hot lunches); Public Welfare Department (milk) |
| Niagara Falls, N.Y. | Yes | ..... | None | None | No | ..... |

‡ Children who can pay do so.

of the children pay for their lunches in whole or in part. Based on these data, a reasonable inference is that open-air classes cannot be successfully conducted in many sections of the country unless the lunches are supplied without charge to a large proportion of the children or unless the registration is restricted to children residing in the economically favored sections.

What agencies defray the cost of the lunches in the cities under investigation? The cost is borne by the board of education in thirteen cities, namely, Detroit, Cleveland, Baltimore, Newark, Hartford, Springfield, Paterson, Albany, Erie, Reading, Allentown, Bayonne, and Niagara Falls, and by the board of health in Toronto. Some of the expenditure is assumed by the board of education in Richmond and in St. Louis. In the remaining seven cities various kinds of co-operative agencies assume the burden. It is apparent that lunches are supplied free of charge to all the children in 65 per cent of the cities and to all the needy children in all the cities.

Doubtless, the two chief questions that perturb the mind of the school administrator are these: Has the economic depression increased the number of serious malnutrites and thereby augmented the need for fresh-air or open-air classes? Is the fresh-air class, the open-air school, or the sanitarium the final word so far as concerns the best method of rehabilitating malnourished children or children susceptible to tuberculosis? These fundamental queries cannot be answered in a paragraph. It is sufficient to emphasize that the evidence available on either of these points is by no means incontestable or unambiguous. Some investigators have reported an astounding increase in the incidence of malnourished school children since the depression began. Others find about the same proportion as formerly. Most studies, however, report a perceptible increase. Evidence of a scientific character scarcely exists on the question whether the health needs of malnutrites or children of lowered vitality can be met as efficiently in well-ventilated regular classrooms as in fresh-air classes or open-air schools if these children are provided in the classrooms with the necessary nutritional and rest programs. Carefully conducted control experiments are needed to settle this point.

# AN INDIVIDUAL STUDY IN WORD RECOGNITION

GERTRUDE HILDRETH
Lincoln School of Teachers College, Columbia University

Little is known of the factors that make words difficult or easy for children to learn. The occasional reports of reading research carried on with large numbers of children leave much to be desired for two reasons: (1) The use of the average in computation of results obscures the individual variations that afford much insight into the nature of learning. (2) The infrequent checking of learning progress during the practice period leaves much of the learning unexplored. Although generalization from a single isolated case is impossible beyond the narrow population of which the individual is a representative sample, the intensive individual study contributes to our knowledge through its completeness. Studies of normal learning with children of school age in which consecutive diary records are kept over a period of time are almost nonexistent in educational records.

The objective of the study reported in this article was to observe and to record the achievement of a normal child of entering-school age in word-symbol–learning as the result of consecutive daily practice. The subject, Peter L., was available for practice for thirty-five days before he was scheduled to enter Grade I in a local public school. At the time the study was begun, the child was five years and nine months of age, with a mental age on the Stanford-Binet test of five years and ten months and an intelligence quotient of 101. Preliminary tests indicated that at the time of beginning practice he had practically zero ability in reading so far as precise word recognition was concerned. Unlike other children, he had shown little interest in books and stories since babyhood. His interests were predominantly mechanical. Although at the previous Christmas he had received a box of anagrams and a set of small word cards, he had refused to play the game. He occupied himself in building large houses of pack-

ing crates and in experimenting with any rusty machinery around the place. Kindergarten attendance had been limited to several months during the previous winter. The kindergarten activities consisted in dramatics, free play, and constructive building. No attempt had been made to teach numbers or reading to the kindergarten group of which Peter was a member.

In addition to the Stanford-Binet test the child was given a brief series of tests at the beginning of the experiment in order to determine the status of perceptual capacity, knowledge of the alphabet, and word recognition. On being shown a number of presumably familiar words printed on cards in manuscript style, Peter was able to recognize only two: his own first name and his sister's, "Ann." He was asked to name the letters of the alphabet from memory and succeeded with *a*, *b*, *c*, *e*, *f*, *q*, *r*, and *s*. He was then asked to write the letters of the alphabet and to name letters of the alphabet shown him. He succeeded in writing and naming all the letters but *i*, *k*, *n*, *q*, *u*, *w*, *y*, and *z*. Usually he not only named a letter but told what it stood for, as *B* for "Bill," *D* for "Douglas," *F* for "Florida," *J* for "Jerry," and *P* "in my name." Of *Z* he said, "Turn it the other way, and it makes *M*." He was asked on another day to write any numbers that he knew and any words that he could spell. In attempting to write numbers, he made an *s* for a "3" a *c* for a "2," and an "8" correctly. He was unable to write any other numbers. The only words he could write were "Peter" and "Ann," the first in script and the latter in large capitals. In the perception-copying section of the Metropolitan Readiness Test, Peter was able to copy correctly three-fourths of the material. Peter's score on the entire test (52) indicated no more than the average readiness of children of his age with respect to perception, vocabulary, number knowledge, and information for first-grade work. The prediction from such a result would suggest comparatively slow learning through Grade I.

The boy's mother reported that he had been slow in learning to talk. At seventeen months he had said, "No, no," and not much else. The only fear that Peter showed was a fear of dogs. He had been bitten by a dog playfully when he was small and had hated the animals ever since. Peter showed a negative attitude toward learning numbers. His father had had trouble with arithmetic in school,

and Peter had already been given some number-teaching, without perceptible success, to offset the handicap under which the family believed he would surely suffer. Peter sensed the anxiety that the family felt about his evident lack of number sense and detested nothing more than to be asked to count, to identify or to write numbers, or to be asked to tell the result of 2+2. Peter had an asset that was favorable for learning: he fitted into routine readily. As a baby he had disliked any change in schedule, and he enjoyed doing the same thing every day at the same time in the same way.

There was a very close attachment between the boy and his mother. He saw less of his father, who was a stricter disciplinarian than the mother. Peter's technical vocabulary was better developed than his general vocabulary. He showed the typical struggle of the child of his age to gain new word-meanings. On finding a croquet mallet, he said, "Oh, look! It's a soda hammer." This puzzled everyone until he fetched the box of baking soda and pointed out the similarity between the "hammer" he had found and the trade-mark of the "Arm and Hammer" brand. In nature-study Peter was no less adept. On finding a discarded tea ball, he said, "Mother, it must be a 'stunkel' bag." He had been told a short time before about skunks and something of the physiology of their scent glands.

### THE DAILY PRACTICE IN WORD RECOGNITION

The materials for the experiment consisted of a set of forty-eight cards, about two and one-half by ten inches in size, each containing a single word printed in manuscript style with black crayon. The series was extended from day to day as new words were needed. The words selected were those most familiar to the child, as revealed in his informal language usage—names of the family and of friends, names of familiar objects, and verbs denoting familiar activities. The remainder of the list was selected as new words were needed; these related to current important events. Some were suggested by the child. "House," "build," and "saw" related to building activities; "light," to a trip to the lighthouse; "typewriter," to the machine with which Peter was completely fascinated.

The problem was to discover how many repetitions would be required through systematic presentation until the child gave a succession of right responses. The words already known were included

at the beginning both to determine the security of the learning and to make the experience easy and attractive. There was evidence that all the words were within the child's speaking and understanding vocabulary. The only element of unfamiliarity was the establishment of association between a word and its printed symbol.

The first five words in the list were selected for exposure on the first practice day. The system of exposures of the flash cards containing the words was as follows: Each word was shown in succession five times in the first day's practice period. A word that the child did not know after he had observed it for a few seconds was pronounced for him. In full sight of the child a check for a correct response was placed in the appropriate square on a large sheet of cross-section paper, and a cross was given for a wrong response. The child was highly praised for each correct response to a word card. At the end of the period he was given a piece of paper "money" as a reward. On the second day repetitions were begun again in the same way. As soon as there were six successive correct responses for any word, the word was considered "learned" up to that point. The word card was removed from the pile and thereafter shown only once a day for six days. After correct responses had been made on six successive days, the card was removed from the "once-a-day" pile and thereafter presented only once a week. In the meanwhile, for every card removed from the "five-times-daily" pile was substituted another new word. Thus, a continuous series of words, some new and some old, were being practiced every day. The cards were shuffled each time between exposures. The daily practice period normally lasted no longer than five to ten minutes. The system of repetitions, which necessarily had to be determined in advance, proved to be adequate for learning yet, at the same time, not unduly fatiguing. Longer practice periods would have been out of the question, and shorter periods might not have resulted in any appreciable permanency in learning.

The "lesson" was given at almost precisely the same time of day, eight o'clock in the morning, in exactly the same place, the same furniture being used, and with the examiner and the child seated in the same positions. Peter easily became adapted to these conditions and felt uncomfortable over slight delays or alterations.

Practice was given daily, including Saturdays and Sundays, in precisely the same way. Records of two kinds were kept: first, the check sheet with the record of correct responses and errors and, second, from the sixth practice day a record of the precise response given to every word exposed. The keeping of the second record was not possible during the first few days because of the extra time that would have been consumed, with possible loss of the child's attention. The second type of record consisted in full diary notes of the child's reactions to the whole experiment.

Peter delighted in "going to school" and in "learning lessons" in this fashion. He had expressed a wish to do some "writing," gladly consented to come to learn some words, never refused to come during the thirty-five practice days, and commented many times during and after the experiment that this was the only "school" he had ever liked. Factors that contributed to successful motivation were the novelty of the work, the flash-card form of practice, the red marks on the check sheet indicating the extent of successful learning, the "money" reward, and the younger sister's jealousy. Peter delighted in the fact that he was old enough to "go to school" whereas Ann was still too young, and he enjoyed regaling the family after each lesson with an account of his learning exploits.

Nothing was ever done to punish Peter for a wrong response, since it was desired that he should maintain a favorable attitude toward all features of the test. When he made an error and showed no immediate tendency to correct it, the correct response was quickly given him, and he usually repeated it immediately. Sometimes when he felt insecure, he gave several different answers in quick succession.

The method of practice is not intended to suggest the proper procedure in beginning reading. Quite the contrary! In the best modern practice precision in independent word recognition ordinarily constitutes the third, rather than the first, stage in learning to read. From the standpoint of reading instruction it would have been better to flash phrases or sentences, but singling out separate words and treating them in the way described made it possible to learn more about word associations and the factors that make words easy or difficult to learn. Nor is it desirable necessarily to teach a child as young as Peter any reading technique. But the investigator did not feel guilty

## TABLE I

### WORDS PRESENTED TO CHILD AND RESPONSES MADE ON EACH OF THIRTY-FIVE PRACTICE DAYS*

| WORD | DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| 1. Peter | ccccc | c | c | c | c | c | c | | | | | | | c | | | | | | | c | | | | | | | c | | | | | | | c |
| 2. Ann | ccccc | c | c | c | c | c | c | | | | | | | c | | | | | | | c | | | | | | | c | | | | | | | c |
| 3. Aunt Louie | xcccx | cxcxc | ccccc | c | c | c | c | c | c | | | | | c | | | | | | | c | | | | | | | c | | | | | | | c |
| 4. daddy | xxxxx | cxxcc | cccxx | cxccc | xcccc | cc | c | c | c | x | x | x | x | c | x | x | c | c | c | c | c | c | | | | | x | | | | | | | x |
| 5. mother | xxxxx | cxxcc | cccc | x | x | c | x | x | x | c | x | x | x | x | x | x | x | c | c | x | c | x | x | x | x | x | x | x | c | x | x | x | x | x | x |
| 6. Tillie | | xccxx | xxxxx | xxccc | ccc | c | c | c | c | c | c | | | c | | | | | | | c | | | | | | | c | | | | | | | x |
| 7. girl | | xcccc | cc | x | c | c | c | c | c | c | c | | | c | | | | | | | c | | | | | | | c | | | | | | | x |
| 8. boy | | | xc | xcccx | xcccx | ccccc | c | c | c | c | c | c | c | c | | | | | | | c | | | | | | | c | | | | | | | c |
| 9. drink | | | xc | xxxxx | ccxcx | ccccx | xcxcc | cxxcc | xcxcc | cxccx | xcccc | xcxcc | ccccc | ccccc | c | x | c | c | c | c | c | c | | | | | | c | | | | | | | c |
| 10. eat | | | | xxxxx | xcxcc | cccc | x | c | c | c | x | c | c | c | c | c | c | c | c | | c | | | | | | | c | | | | | | | c |
| 11. milk | | | | | | xccxx | xxccc | cxc | c | c | c | c | c | c | | | | | | | c | | | | | | | c | | | | | | | c |
| 12. candy | | | | | | xxcc | xcccc | cc | c | c | c | c | c | c | | | | | | | c | | | | | | | c | | | | | | | c |
| 13. bread | | | | | | | xxccc | xcxcc | xcxcx | xcxxx | xcxcc | xxccc | ccc | x | x | c | c | c | c | c | c | | | | | | | c | | | | | | | c |
| 14. dog | | | | | | | ccccc | c | c | c | x | c | c | c | x | c | c | c | c | c | c | | | | | | | c | | | | | | | c |
| 15. children | | | | | | | | xxx | xcxxx | xxxxx | xxxxc | xxxxc | xxccc | xcccc | xcccc | cc | c | c | c | c | c | c | | | | | | x | | | | | | | c |
| 16. automobile | | | | | | | | xcc | cccc | c | c | c | c | c | c | | | | | | | | | | | | | c | | | | | | | c |
| 17. play | | | | | | | | xcc | xcccc | cxcxc | ccccc | c | c | x | x | c | c | c | c | c | c | | | | | | | c | | | | | | | c |
| 18. school | | | | | | | | | xxc | xcccx | ccxcx | ccccc | c | c | c | c | x | c | c | c | c | x | c | c | c | c | c | c | x | x | c | x | c | c | c |
| 19. three | | | | | | | | | | | | xcccc | xcccc | cxccx | xcccc | cc | c | x | c | c | x | x | x | c | c | c | c | x | x | c | x | x | x | x | x | x |
| 20. saw | | | | | | | | | | | | | xcc | cccc | c | c | x | c | c | c | c | c | x | c | c | c | c | | | | | | | | | x |
| 21. dig | | | | | | | | | | | | | | xcccc | xcccc | cc | c | c | c | c | c | c | c | | | | | | | | | | | | | c |
| 22. hammer | | | | | | | | | | | | | | | xxxccc | ccc | c | c | c | c | c | c | | | | | | | | | | | | | | c |
| 23. Monday | | | | | | | | | | | | | | | xxcccc | xcccc | cc | c | c | c | c | c | c | c | | | | | | | | | | | | c |
| 24. money | | | | | | | | | | | | | | | | xcxc | xxccc | ccc | c | c | c | c | c | | | | | | | | | | | | | c |
| 25. house | | | | | | | | | | | | | | | | xxcx | xcccx | cxccc | xxccc | cxxxx | xcxxc | xxxcc | xccxc | cxccc | ccc | x | x | x | x | x | x | x | x | x | x | x |
| 26. kitten | | | | | | | | | | | | | | | | xcc | xcccc | ccc | c | c | c | c | x | c | c | c | c | c | c | | | | | | | c |
| 27. street | | | | | | | | | | | | | | | | xxc | xxccc | ccxxc | cxcxc | ccxxc | xxxcx | xxxcx | xxxxx | xxxxx | cxxxc | xxxxc | xxxxx | xxxxx | xxxcx | xxccx | xxccc | cxccx | xxxcc | cxxxx | c |
| 28. Frank | | | | | | | | | | | | | | | | | xcccc | cc | c | c | c | c | c | c | | | | c | | | | | | | c | |
| 29. typewriter | | | | | | | | | | | | | | | | | | xcc | xcccc | cc | x | c | c | c | x | c | x | c | c | c | c | c | c | | c |
| 30. stop | | | | | | | | | | | | | | | | | | xxx | xccxx | xcccc | cc | c | c | c | c | c | c | c | | | | | | | c |
| 31. go | | | | | | | | | | | | | | | | | | xcc | xcccc | cc | c | c | c | c | c | c | c | c | | | | | | | c |
| 32. light | | | | | | | | | | | | | | | | | | | | xccc | ccc | c | c | c | c | c | c | c | | | | | | | c |
| 33. ice cream | | | | | | | | | | | | | | | | | | | | xxxc | c | c | c | c | c | c | c | c | | | | | | | c |
| 34. engine | | | | | | | | | | | | | | | | | | | | | xccc | ccc | x | c | c | c | c | c | | | | | | | c |
| 35. work | | | | | | | | | | | | | | | | | | | | | | xxcx | xcxxx | xxxxc | xxxxc | xxxcx | xcccc | cxxxx | xxcxc | xxccc | ccccc | c | x | c | c |
| 36. little | | | | | | | | | | | | | | | | | | | | | | xccc | xcccc | xcccc | cc | c | x | c | c | x | c | c | x | c | c |
| 37. shoes | | | | | | | | | | | | | | | | | | | | | | xcc | xxxxx | xxccc | xcccc | cc | x | c | c | c | c | c | c | | c |
| 38. one | | | | | | | | | | | | | | | | | | | | | | | | | xxx | xxxxx | cxxxx | xxxxx | xxxxx | xccxx | xxccx | xxccx | cxxxx | xxxxx | c |
| 39. big | | | | | | | | | | | | | | | | | | | | | | | | | xcc | xcccx | ccccc | c | x | x | c | x | c | c | c |
| 40. man | | | | | | | | | | | | | | | | | | | | | | | | | | xccc | xcxcx | ccccc | c | x | c | c | c | c | c |
| 41. baby | | | | | | | | | | | | | | | | | | | | | | | | | | | | xxxx | xcxcx | xcccc | cc | c | c | c | c |
| 42. pretty | | | | | | | | | | | | | | | | | | | | | | | | | | | | | xccxx | xxccc | ccc | c | c | c | c |
| 43. pony | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | xcccc | cc | c | c | c |
| 44. ride | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | xccx | xxccx | xccxx | ccccc | c |
| 45. ball | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | xcc | xcxcc | cccc | c | c |
| 46. September | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | cxc | xxcxx | xxxxx | cxxxx |
| 47. table | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | x | xcccc | xcccx |
| 48. chair | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | xcx |

* c indicates that child recognized the word correctly, x that he failed to recognize it correctly.

of violating the laws of "readiness" in Peter's case because he was scheduled soon to be plunged into the intricacies of first-grade, formal, public-school instruction in reading.

## RESULTS

Table I indicates the number of exposures of each card required to reach each separate stage of "learning." Individual differences in word difficulty are revealed. The daily increase in the number of

TABLE II

NUMBER OF WORDS LEARNED TO POINT OF SIX CORRECT RESPONSES ON EACH OF THIRTY-FIVE PRACTICE DAYS

| Day | Number of Words | Day | Number of Words |
|---|---|---|---|
| 1 | | 19 | 26 |
| 2 | 2 | 20 | 28 |
| 3 | 5 | 21 | 31 |
| 4 | 5 | 22 | 32 |
| 5 | 6 | 23 | 32 |
| 6 | 8 | 24 | 32 |
| 7 | 9 | 25 | 34 |
| 8 | 12 | 26 | 35 |
| 9 | 13 | 27 | 35 |
| 10 | 13 | 28 | 36 |
| 11 | 14 | 29 | 37 |
| 12 | 14 | 30 | 37 |
| 13 | 16 | 31 | 40 |
| 14 | 18 | 32 | 41 |
| 15 | 18 | 33 | 42 |
| 16 | 22 | 34 | 42 |
| 17 | 23 | 35 | 43 |
| 18 | 26 | | |

words learned to the point of six successive correct responses is shown in Table II.

In terms of the number of exposures the words easiest to learn were, in order of ease of learning: "Peter," "Ann," "dog," "girl," "automobile," "saw," "Frank," "light," "engine," "pony," "hammer," "ice cream," "typewriter," "go," and "candy." According to the same criterion, the words hardest to learn were, in order of difficulty: "street," "drink," "one," "work," "house," "children," "bread," "daddy," "school," "three," "shoes," "ride," "Tillie," "boy," "play," and "September." It was impossible to determine

conclusively the ease or the difficulty of learning the new words presented in the last few days of practice.

Throughout the experiment eye-movements were observed informally. Peter was more inclined to begin eye-movements at the left side of a card than at the right. However, there was a great deal of searching movement revealed by quick twists of the head from left to right and from right to left as the eyes swept across a card. On the words "drink" and "mother" the eyes moved quickly back and forth in no regular order. On the first day of the experiment Peter showed a definite left-to-right orientation on the longer word card "Aunt Louie," but the movements broke down on more difficult words. Peter's eyes appeared to rest longer on the fore and the end parts of words than on the middle.

Alternative wrong responses for each word in the series are given in Table III. Since the recording of wrong responses was not begun until the sixth day of practice, the record is not complete. It is apparent from the list of incorrect responses that Peter tended ordinarily to respond to each word with a single word rather than with a clause or a phrase; that he usually gave some response other than "Don't know"; that most of the responses were meaningful words, not nonsense syllables; that many of the wrong responses were correct responses to other words in the list; that many of the wrong responses in a precise sense actually have some meaningful association with the correct response (for example, "milk" for "drink" and "daddy" for "man"); that many responses were words that rhyme or have common sound elements; that general terms were often reduced to concrete terms (for example, "engine" for "work"). Associations were also formed readily with other words in the same series of five shown on the same day, so that instead of the correct response a contiguous word was named. Similar perceptual elements formed another basis of association resulting in frequent wrong responses.

### EASE AND DIFFICULTY OF LEARNING WORDS

The contrast between the words most difficult to learn and those easiest to learn affords considerable insight into the nature of word-symbol–learning in young children. The words easiest to learn in contrast with those most difficult to learn appeared to be: (1) the

TABLE III

INCORRECT RESPONSES MADE TO EACH WORD AND FREQUENCY OF EACH INCORRECT RESPONSE

| Response | Frequency |
|---|---|
| 4. daddy *called:* | |
| candy | 7 |
| boy | 1 |
| 5. mother *called:* | |
| daddy | 19 |
| eat | 2 |
| street | 1 |
| house | 1 |
| "Don't know" | 1 |
| 9. drink *called:* | |
| milk | 11 |
| eat | 2 |
| boy | 1 |
| 10. eat *called:* | |
| drink | 1 |
| daddy | 1 |
| 11. milk *called:* | |
| boy | 1 |
| candy | 1 |
| drink | 1 |
| No response | 1 |
| 12. candy *called:* | |
| daddy | 1 |
| drink | 1 |
| No response | 1 |
| 13. bread *called:* | |
| daddy | 6 |
| eat | 3 |
| candy | 2 |
| drink | 1 |
| chair | 1 |
| child | 1 |
| dog | 1 |
| "Don't know" | 2 |
| 14. dog *called:* | |
| boy | 2 |
| 15. children *called:* | |
| daddy | 7 |
| bread | 5 |
| child | 3 |
| dog | 3 |
| candy | 2 |
| automobile | 1 |
| chair | 1 |
| house | 1 |
| mother | 1 |
| nine | 1 |
| 16. automobile *called:* | |
| "Don't know" | 1 |
| 17. play *called:* | |
| school yard | 2 |
| school | 2 |
| dog | 1 |
| No response | 1 |
| 18. school *called:* | |
| house | 3 |
| child | 2 |
| play | 2 |
| children | 1 |
| milk | 1 |
| one | 1 |
| rain | 1 |
| skoon | 1 |
| "I know S" | 1 |
| 19. three *called:* | |
| one | 8 |
| house | 3 |
| eat | 2 |
| two | 2 |
| cat | 1 |
| Monday | 1 |
| street | 1 |
| 20. saw *called:* | |
| Monday | 1 |
| work | 1 |
| No response | 1 |
| 21. dig *called:* | |
| dog | 1 |
| No response | 1 |
| 22. hammer *called:* | |
| drink | 1 |
| saw | 1 |
| No response | 1 |
| 23. Monday *called:* | |
| daddy | 1 |
| drink | 1 |
| No response | 1 |
| 24. money *called:* | |
| candy | 1 |
| more | 1 |
| street | 1 |
| No response | 1 |
| 25. house *called:* | |
| street | 15 |
| eat | 7 |
| mouse | 3 |
| school | 2 |
| three | 2 |
| kitten | 1 |
| money | 1 |
| shoes | 1 |
| 26. kitten *called:* | |
| cat | 2 |
| Monday | 1 |
| No response | 1 |
| 27. street *called:* | |
| eat | 14 |
| house | 14 |
| three | 10 |
| mouse | 7 |
| one | 4 |
| Monday | 3 |
| school | 3 |
| shoes | 2 |
| candy | 1 |
| daddy | 1 |
| kitten | 1 |
| man | 1 |
| work | 1 |
| No response | 2 |
| 28. Frank *called:* | |
| No response | 1 |
| 29. typewriter *called:* | |
| automobile | 3 |
| ice cream | 2 |
| 30. stop *called:* | |
| go | 6 |
| No response | 1 |
| 31. go *called:* | |
| kitten | 1 |
| No response | 1 |
| 32. light *called:* | |
| No response | 1 |
| 33. ice cream *called:* | |
| ice-cream cone | 3 |
| 34. engine *called:* | |
| light | 1 |
| No response | 1 |
| 35. work *called:* | |
| engine | 7 |
| house | 6 |
| saw | 5 |
| drink | 4 |
| big | 1 |
| candy | 1 |
| eat | 1 |
| Monday | 1 |

TABLE III—*Continued*

| Response | Frequency |
|---|---|
| 35.—*Continued* | |
| mouse | 1 |
| three | 1 |
| Unintelligible | 1 |
| No response | 2 |
| 36. little *called:* | |
| big | 1 |
| eat | 1 |
| kitten | 1 |
| kitty | 1 |
| mouse | 1 |
| No response | 1 |
| 37. shoes *called:* | |
| house | 5 |
| school | 3 |
| street | 1 |
| No response | 1 |
| 38. one *called:* | |
| three | 17 |
| two | 8 |
| house | 6 |
| little | 3 |
| eat | 2 |
| mouse | 2 |
| baby | 1 |
| big | 1 |
| school | 1 |
| street | 1 |
| No response | 1 |
| 39. big *called:* | |
| boy | 1 |
| dig | 1 |
| eat | 1 |
| go | 1 |
| house | 1 |
| light | 1 |
| 40. man *called:* | |
| daddy | 2 |
| house | 1 |
| street | 1 |
| three | 1 |
| 41. baby *called:* | |
| boy | 2 |
| daddy | 1 |
| house | 1 |
| Monday | 1 |
| street | 1 |
| three | 1 |
| 42. pretty *called:* | |
| house | 2 |
| drink | 1 |
| mouse | 1 |
| pony | 1 |
| 43. pony *called:* | |
| No response | 1 |
| 44. ride *called:* | |
| pony | 6 |
| eat | 1 |
| No response | 1 |
| 45. ball *called:* | |
| eat | 1 |
| pony | 1 |
| No response | 1 |
| 46. September *called:* | |
| Monday | 12 |
| ball | 1 |
| holiday | 1 |
| 47. table *called:* | |
| ball | 1 |
| chair | 1 |
| eat | 1 |
| play | 1 |
| 48. chair *called:* | |
| table | 1 |
| "Chair belongs to table" | 1 |

most familiar words—those seen or heard most often up to the time of the experiment; (2) the most specific, concrete, and unequivocal words; (3) the words calling up the pleasantest associations ("ice cream," "candy," "pony") in contrast with those with unpleasant or negative associations (number names and the word "street"); (4) the words having perceptual distinction for any reason—the longest or the shortest words or those with peculiarities of formation that help to discriminate the words (for example, "typewriter," "go"); (5) words normally easy for a child to pronounce (although Peter had no observable difficulty in pronouncing any of the words); words with consonant blends appeared more frequently in the "difficult" list than in the "easy" list.

A study of the responses and observation of the child's behavior while responding warrant the following additional conclusions.

1. Peter showed a decided tendency to project the words representing things he liked to less interesting words.

2. All the established laws of learning discovered by experimental psychologists were found operative in establishing correct responses and in breaking up incorrect responses.

3. Meaning proved to be more potent than mere perception in word-learning. Ease or difficulty of learning cannot be explained solely on the basis of perceptual factors. Meanings, concepts, sound associations, and emotional connotations appear to be more potent in word-learning than is the configuration of a word or some characteristic feature alone. Previous experience or association with an object or an experience that the word represents influences ease or difficulty of learning.

4. The number of repetitions did not operate uniformly in producing successful learning.

5. Associating only one word-name with a single symbol is a major problem for a young child. Peter's greatest difficulty was to detach from a single word card the wealth of meanings which he associated with the word and to give in response to the sight of the word its own precise word-name. All other difficulties were mild compared with this confusion. The same difficulty was recently witnessed in another boy, four years of age, whose parents had "taught him to read." When shown a series of twenty-five words, each on a single flash card, he responded to most of them with a phrase or a complete sentence, and some of the words even stimulated description or the telling of a brief story. At first, Peter invariably said "ice-cream cone" for "ice cream." The general concept of ice cream was to him less significant than the form of ice cream, the familiar reality, "the cone in hand." This idea must have been more pleasurable than merely the notion of "ice cream." A young child in beginning reading does not know that one single set of letters marked off apart from other series must say only one thing and always one thing. He does have some idea of the wealth of ideas a single word can express —"drink milk," "drink water," "drink orange juice." We are exacting a high degree of selective precision and refinement when we pin a child down to one name for each single word and ask him to exclude all the other associations that may enter his head at the time. The normal child of six has an embarrassment of riches in word associations.

6. The words most quickly learned were often the most firmly retained.

7. Extreme differences were revealed in the ease of learning new words.

8. The high degree of specificity of learning characteristic of young children was observed. Words learned in one form or in one connection were not necessarily recognized in another place or when prepared in another size. Results from the final tests indicated this high specificity of learning. Peter was unable to recognize words that he had learned when they were presented on smaller cards in smaller type. He was unable to recognize them when printed in capitals. His knowledge of the alphabet had not increased incidentally. He had not isolated parts of words, phonetic elements, syllables, or individual letter forms. He could seldom recognize words that he had learned when they were presented in sentences in letters of the same size as those on the word cards. His learning was specific to the conditions under which he had learned. Additional practice with material in new form would have been necessary for any of these transfers.

9. Words appeared to be learned more as total *Gestalts* than as summations of the individual letters or parts of which they are composed. Phonetic or letter elements were seldom extracted by the child. "Ice cream," written as two words, was confused with "typewriter."

10. Learning appeared to be facilitated through systematic presentation, regularity of time and place.

11. Attention is a prime factor in successful learning. Words from which Peter turned away his glance for any reason required more repetitions than other words.

12. Familiarity with the meaning of the word was a significant factor in successful learning.

13. Perceptual confusion seemed less common than meaning confusions or word-association confusions.

14. No one factor appeared to be responsible for the ease or the difficulty of learning any word. The factors affecting word-learning are complex and varied.

EMOTIONAL FACTORS IN LEARNING

Why our new understanding of the part that emotional factors play in learning, partly as a result of Freudian researches on emotional complexes and the new objective psychology with its emphasis on fear and love as motivating factors in behavior, has not been more generally applied in primary-grade teaching is difficult to understand. Nothing was more apparent in Peter's responses than the ease with which he learned words of a pleasant emotional tone and the difficulty that he experienced with words representing things feared or hated or words describing situations over which deep-seated emotional complexes might have developed. Strong, satisfying emotional attachment apparently facilitated learning of the words "candy," "pony," "automobile," "Frank," and "ice cream."

The word most difficult to learn, for no reason at first apparent, was "street." Peter's house was situated on a congested street only thirteen feet wide, the main artery of the village to the beach. A stout fence surrounded the house and yard, and nothing had been more firmly impressed on Peter's mind than the fact that he must never cross nor even go near the street. Every day he would hang disconsolately on the fence, watching the cars go by. He greatly feared the street, much as it fascinated him. He had repeatedly been told that, if he ventured near the street, he would be severely injured or perhaps killed. From the first, it was apparent from Peter's reaction to the card that something was wrong with "street." Instead of looking at the word fixedly, as was his custom with other words, he turned away from it. This show of fear toward a white piece of cardboard on which some black letters were printed never wore off completely. He appeared, if any child ever did, practically "word-blind" toward this word. Except for the consonant blend *str*, there appears to be nothing intrinsically more difficult in the word "street" than in other words which he learned quickly. Since he was learning whole words, not consonant blends, and had no difficulty in pronouncing the word "street" as a whole, it is difficult to see how anything inherent in the word could have caused the difficulty. There was no variation in presentation, nothing unusual in the situation when the word was first presented. If anything, the double *ee* and the two *t's* should have aided perception. Rhyming responses to

the word were frequent, but such responses were also made to other words more quickly learned. The word was in no wise unfamiliar either in meaning or even in form. The difficulty with this word seems to have been a clear case in which mere perceptual configuration was much less potent than association, especially emotionally-toned association, in affecting learning.

This conclusion suggests a new departure in the teaching of reading, though not necessarily new to progressive educators, who have always considered the "whole child" and his attitudes as factors in learning. Learning to read should begin with the highly pleasurable concepts and experiences that promise full enjoyment for the child. The finding also suggests the need for regarding the child's drives and emotional maturity in understanding reading difficulties.

There is evidence from the experiment to show why artificial serial-order presentation of single words is an improper method of reading instruction. Associations are formed by the child, not between the words and their meanings, the response which is desired, but between the different words in the series presented together, with the resulting confusions that have been indicated. Once formed, these arbitrary, meaningless associations may be difficult to break up. The same problem exists in learning Latin or French paradigms by rote.

All the foregoing statements and conclusions indicate the complexity of learning for the young child, who comes fresh to a task with little previous learning, even when the learning task is presumably simplified and routinized and when learning factors are kept fairly constant.

# SELECTED REFERENCES ON KINDERGARTEN-PRIMARY EDUCATION

KATHERINE L. McLAUGHLIN
University of California at Los Angeles

The publications in this, the third annual list of references in kindergarten-primary education, appeared during the year from January 1, 1934, to January 1, 1935. Two trends are apparent in the year's compilation of several hundred titles: emphasis on pupil-adjustment problems and an increased number of investigations dealing with kindergarten and first-grade problems. The titles chosen from the longer list are grouped under the following headings: (1) general educational aspects; (2) organization, techniques, and curriculum; (3) investigations and experimental studies.

## General Educational Aspects[1]

126. Arlitt, Ada Hart. "Your Child Enters School for the First Time," *Parent Education*, IV, 99–106. Fourth Yearbook of the National Congress of Parents and Teachers. Washington: National Congress of Parents and Teachers, 1934.

Considers normal physical and mental condition of kindergarten entrants. Cautions that attitudes and habits formed at home should contribute to school adjustment.

127. Brim, Orville G. "Basic Realities and the Activity Movement," *Progressive Education*, XI (October, 1934), 328–33.

Seeks, in data from biology, psychology, physics, and social philosophy, "tenable criteria" for interpretation of basic principles.

128. Burnham, William H. "Mental Hygiene in the Pre-School Period," *Progressive Education*, XI (December, 1934), 441–44.

Emphasizes significance of stabilization of habits of mental and physical health in early childhood.

129. Davis, Mary Gould. "Children's Books at the International Bureau of Education," *Elementary English Review*, XI (June, 1934), 162–63.

Describes the collection of children's books and books dealing with matters pertaining to children which have been contributed by thirty-seven countries to

[1] See also Item 384 in the list of selected references appearing in the October, 1934, number of the *Elementary School Journal* and Item 623 in the December, 1934, number.

the International Bureau of Education in Geneva. Special mention is given to the books from the United States, Russia, Sweden, the Balkans, China, and England.

130. GRAY, WILLIAM S. "Controversial Issues Relating to the Activity Curriculum," *Progressive Education*, XI (October, 1934), 334–39.

Considers in critical detail four interpretations of the activity movement and offers three tentative conclusions for further study.

131. HANSEN, ROWNA. *Some Educational Activities for the Young Child in the Home.* United States Office of Education Pamphlet No. 51 (1934). Pp. 24.

Discusses ways in which parents may help in educating their children at home. Suggestions are given for child guidance, playroom and play yard, appreciation of music and art, excursions, and preparations for beginning reading. A bibliography is included.

132. KAWIN, ETHEL. *The Wise Choice of Toys.* Chicago: University of Chicago Press, 1934. Pp. xii+112.

Concerns toys appropriate at different age levels for developing strength and skill, constructive and creative play, habit training, etc. Stresses the function of play and play materials in the formation of an integrated personality.

133. MUDGE, ANNA. "Trends in Juvenile Publications, 1920–1930," *Elementary English Review*, XI (January, 1934), 9–12, 32.

Analyzes trends in content of juvenile publications, number of publications, factors influencing a decade of development, and the effect of the depression as reported by publishers and librarians.

134. SMITH, NILA BANTON. "What Price Kindergartens?" *Childhood Education*, X (June, 1934), 467–72.

Deals with results of kindergarten training in the fields of physical, mental, emotional, and social growth. Explains how the kindergarten lays foundations for later subject-matter learning.

135. STEVENSON, GEORGE S., and SMITH, GEDDES. *Child Guidance Clinics.* New York: Commonwealth Fund, 1934. Pp. viii+186.

Traces the history and the development of the child-guidance movement and discusses present-day clinics as agencies for synthesizing methods of approach to problems of behavior and personality in early childhood.

136. WOODS, ELIZABETH L. "Research Needs in Kindergarten-Primary Field," *Childhood Education*, X (June, 1934), 464–66.

Points out trends of interest in approximately a thousand research studies dealing with infancy and childhood which have been published during the past two years. Suggests need for further research in certain fields, such as teacher personality, informal versus formal procedures, and criteria for reading readiness and arithmetic learning in early grades.

ORGANIZATION, TECHNIQUES, AND CURRICULUM[1]

137. BERKELEY, CALIFORNIA, PUBLIC SCHOOLS. "The Kindergarten Discussion Period," *American Childhood*, XX (October, 1934), 14–15, 46.
Discusses aims of group and individual participation in the discussion period, presents teaching procedures, and summarizes outcomes.

138. CHAMBERLAIN, WINIFRED. "Records Become Real in Kindergarten," *American Childhood*, XIX (January, 1934), 14–16, 47–48.
Evaluates various types of records used in kindergartens, such as reports to parents, individual progress records, and records kept by children.

139. DAWE, HELEN C. "The Influence of Size of Kindergarten Group upon Performance," *Child Development*, V (December, 1934), 295–303.
Studies the effect of size of group and the child's position in the group on the amount learned and on the contributions made to group discussion.

140. DOLCH, EDWARD WILLIAM. "The Efficiency of Primers in Teaching Word Recognition," *Journal of Educational Research*, XXVIII (December, 1934), 271–75.
Uses samples from vocabularies given in the back of two primers as the basis for a vocabulary-recognition test. Results give a check on how well each primer taught the vocabulary it purported to teach. Recommends annual use of a test by the same schools in order to establish norms.

141. HACKETT, ARTHUR E. "Teaching Non-English Beginners," *American Childhood*, XX (October, 1934), 12–13.
Presents procedures used with Indian children and points out general principles applicable to teaching non-English-speaking groups.

142. HUGHES, AVAH W. "Social Science in the Second Grade," *Childhood Education*, X (May, 1934), 409–13.
Discusses experiences in social living that are centered in "explorations and investigations of various phases of city life."

143. KAWIN, ETHEL. "The Function of Toys in Relation to Child Development," *Childhood Education*, XI (December, 1934), 122–24, 132.
Summarizes the functional values of toys and classifies them under nine headings, such as "Toys for the Infant before He Can Walk," "Toys for the Development of Strength and Skill," "Toys for Constructive and Creative Play," and "Toys for Social Development."

144. LANGDON, GRACE. "Comparisons of Teaching in Nursery School, Kindergarten and First Grade," *Childhood Education*, XI (November, 1934), 51–54; (December, 1934), 107–13.
Analyzes differences and similarities, at three grade levels, of certain teaching acts that emphasize play and social development, manual and fine arts, English, and use of number.

[1] See also Items 297, 303, 320, 326, and 362 in the list of selected references appearing in the September, 1934, number of the *Elementary School Journal;* Items 382, 410, 416, and 423 in the October, 1934, number; and Items 471 and 480 in the November, 1934, number.

145. McGuire, Edna. "Poem Selection for Primary Grades," *Elementary English Review*, XI (December, 1934), 263–67.

Reviews and evaluates data of previous studies and describes methods used by the author in determining a basic list of poems for Grades I–III, inclusive.

146. Pierce, Paul R., and Quinn, Helen J. "A Study of Certain Types of Work Materials in First-Grade Reading," *Elementary School Journal*, XXXIV (April, 1934), 600–606.

Compares experimentally the relative merits of "workbook" materials and "picture-dictionary" materials in initial reading instruction.

147. Seeds, Corinne A. "Rhythmic Expression: An Outgrowth of Learning," *Progressive Education*, XI (November, 1934), 398–406.

Describes rhythmic dramatization evolved by third-grade pupils in building a pueblo home.

148. Tessin, Louise D.; Newell, Charles Edward; Todd, Jessie; and D'Amico, Victor. "Art in Childhood," *American Childhood*, XX (September, 1934), 21–28, 47–48; (October, 1934), 21–28, 48; (November, 1934), 17–22, 47–48; (December, 1934), 18–25, 40, 42–43.

A series of discussions by art educators on principles and expression involved in social-science units.

149. Wilson, Clara. "A New Study in Primary Reading," *Childhood Education*, X (January, 1934), 195–96.

Describes methods used by second-grade pupils in attacking unfamiliar words in reading.

150. Wolfle, Dael L. "The Rôle of Generalization in Language," *British Journal of Psychology*, XXIV (April, 1934), 434–44.

Discusses sound symbolism, word meaning, and analogic change as related forms of the process of generalization.

### Investigations and Experimental Studies[1]

151. Abel, Lorraine B. "A Test of Eye-Hand Co-ordination at the Fifth Year Level," *Journal of Applied Psychology*, XVIII (June, 1934), 418–21.

Describes validation of a series of sixteen "tentative" paper-folding tests for young children.

152. Betts, Emmett Albert. "A Physiological Approach to the Analysis of Reading Disabilities," *Educational Research Bulletin*, XIII (September 19, 1934, and October 17, 1934), 135–40, 163–74.

Describes diagnostic-test procedures in reading and discusses special functions related to reading disabilities.

[1] See also Items 365, 399, 400, 424, and 429 in the list of selected references appearing in the October, 1934, number of the *Elementary School Journal* and Items 476 and 514 in the November, 1934, number.

153. BIGELOW, ELIZABETH B. "School Progress of Under-Age Children," *Elementary School Journal*, XXXV (November, 1934), 186–92.

Compares relative achievements of two groups of first-grade entrants: one group of children less than six years of age at entrance and another group of children from six years to six years and four months of age.

154. BURKE, AGNES; GARRISON, CHARLOTTE; THORN, ALICE; DALGLIESH, ALICE. "Social Development on Three Age Levels," *Childhood Education*, X (April, 1934), 361–66.

Analyzes typical social-science experiences of four-, five-, and six-year-old children in the Horace Mann School, Teachers College, Columbia University. Shows continuous growth of social organization, possibilities for development of social attitudes, and the part played by information in social life at these three early age levels.

155. CARR, WILLIAM G. "The Status of the Kindergarten," *Childhood Education*, X (March, April, and May, 1934), 283–86, 374–76, 425–28.

Presents data from 694 cities in 41 states that show for the period of 1930–34 a decrease in the number of kindergartens, in teachers' salaries (26 per cent), and in pupil enrolment. Points out the need of appreciation of the importance of kindergarten training on the part of the public and especially on the part of school-board members.

156. CRIDER, BLAKE. "The Lack of Cerebral Dominance as a Cause of Reading Disabilities," *Childhood Education*, X (February, 1934), 238–39, 270.

Discusses the relation of cerebral dominance to reading disabilities and points out limitations of the theory.

157. CUSHING, HAZEL M. "A Tentative Report of the Influence of Nursery School Training upon Kindergarten Adjustment as Reported by Kindergarten Teachers," *Child Development*, V (December, 1934), 304–14.

Seeks to measure effects of nursery-school training as evidenced at kindergarten level.

158. DAWE, HELEN C. "Raising Standards of Behavior in the Kindergarten," *Elementary School Journal*, XXXV (December, 1934), 267–80.

Analyzes child-training contacts observed in ten public-school kindergartens to determine the results of explicit methods on modification of standards of behavior in type activities.

159. FISHER, MILDRED L. "Measured Differences between Problem and Non-Problem Children in a Public-School System," *Journal of Educational Sociology*, VII (February, 1934), 353–64.

Compares 360 problem children with an equal number of non-problem classmates by means of an extensive battery of tests. Finds the latter group superior in intellectual and social traits, in home background, emotional adjustment, socio-economic status, and physical fitness. Reports reliable differences in tests of social and emotional traits appearing at kindergarten level and tending to persist throughout school years.

160. FRANCIS, KENNETH V., and FILLMORE, EVA A. *The Influence of Environment upon the Personality of Children.* University of Iowa Studies in Child Welfare, Vol. IX, No. 2. Iowa City, Iowa: University of Iowa, 1934. Pp. 72.

Reviews methods used in selecting a check list of social and economic factors characteristic of two opposite-type urban areas and analyzes the effect of differences in environmental influences on two comparable groups of children living within the two areas.

161. HARRISON, M. LUCILE. "The Nature and Development of Concepts of Time among Young Children," *Elementary School Journal*, XXXIV (March, 1934), 507–14.

Studies responses of 160 children from kindergarten through Grade III to 50 common "time" terms (not listed) selected from eight vocabulary lists.

162. HURLOCK, E. B. "Experimental Investigations of Childhood Play," *Psychological Bulletin*, XXXI (January, 1934), 47–66.

Summarizes results of 128 investigations under fourfold age-period classification and discusses types of play, play material, time spent in play, social participation, and differentiation in play due to sex, intelligence, race, and environment.

163. HURLOCK, E. B., and THOMSON, J. L. "Children's Drawings: An Experimental Study of Perception," *Child Development*, V (June, 1934), 127–38.

Studies 2,292 drawings produced by 284 children ranging in age from four and a half to eight and a half years. Reports that older children tend to copy more specific objects, to include more details, and more frequently to include background, correct coloring, associated objects, and design.

164. LEE, J. MURRAY; CLARK, WILLIS W.; and LEE, DORRIS MAY. "Measuring Reading Readiness," *Elementary School Journal*, XXXIV (May, 1934), 656–66.

Describes construction and validation of a reading-readiness test and compares results obtained from its use with results of two other methods utilized in predicting reading readiness of first-grade entrants.

165. MCLAUGHLIN, KATHERINE L. "Studies of Measurable Values in Kindergarten Training," *Bulletin of the Southern Section of the California Kindergarten Primary Association*, Vol. X, No. 1, pp. 9–13. Riverside, California: California Kindergarten Primary Association, Southern Section, 1934.

Summarizes investigations dealing with (1) types of pupils who profit by kindergarten experiences, (2) effect of training on later school achievement, and (3) training in relation to social adjustment.

166. NIXON, ANNA M. "Sentence Structure in the Oral Language of Certain Primary Grade Pupils." Master's thesis, University of Iowa, 1932. Abstract in Walter Scribner Guiler and Emmett Albert Betts, "A Critical Summary of Selective Research," *Elementary English Review*, XI (May, 1934), 140–41.

Analyzes sentences used by primary pupils to determine degree of skill in sentence structure and the type, length, and frequency of sentence arrangements.

167. OLSON, WILLARD C., and CUNNINGHAM, ELIZABETH MECHEM. "Time-Sampling Techniques," *Child Development*, V (March, 1934), 41–58.

Summarizes seventy-six studies containing descriptions, adaptations, or general discussions of time-sampling methods. The results suggest that the method may be employed in a large number of technical problems involving observation of behavior.

168. SAUVAIN, WALTER HOWARD. *A Study of the Opinions of Certain Professional and Non-professional Groups Regarding Homogeneous or Ability Grouping*. Teachers College Contributions to Education, No. 596. New York: Teachers College, Columbia University, 1934. Pp. viii+152.

Presents opinions of parents, teachers, and school administrators with regard to homogeneous grouping and analyzes factors influencing responses.

169. TINKER, MILES A. "The Rôle of Eye Movements in Diagnostic and Remedial Reading," *School and Society*, XXXIX (February 3, 1934), 147–48.

Aims to demonstrate "that carefully planned and executed remedial treatment, based upon accurate diagnosis," will achieve improvement if pupil is adequately motivated. Points out that eye-movements are merely symptomatic of reading disability and are controlled by changes in the processes of perception and apprehension.

170. UNZICKER, CECILIA E. *An Experimental Study of the Effect of the Use of the Typewriter on Beginning Reading*. Teachers College Contributions to Education, No. 610. New York: Teachers College, Columbia University, 1934. Pp. viii+96.

Compares the reading achievement of two groups of first-grade pupils, one of which used the typewriter for 75–90 minutes a week over a period of seven months.

171. VANCE, THOMAS F., and MCCALL, LOUISE T. "Children's Preferences among Play Materials as Determined by the Method of Paired Comparisons of Pictures," *Child Development*, V (September, 1934), 267–77.

Purposes to determine preferences of a group of children three to six years old for series of pictures of play materials and to compare order of preference with order of choice of actual play materials in spontaneous play on playground or in some restricted playroom.

172. WOODY, CLIFFORD, and PHILLIPS, ALBERT J. "The Effects of Handedness on Reversals in Reading," *Journal of Educational Research*, XXVII (May, 1934), 651–62.

Summarizes studies of differences in responses of right- and left-handed children to situations involving type skills emphasized in reading or activities related to reading. A part of a larger investigation being made by the Bureau of Educational Reference and Research, University of Michigan, for determining norms in primary grades for diagnostic reading tests.

# Educational Writings

## REVIEWS AND BOOK NOTES

*Principles underlying the techniques of teaching.*—Recent educational developments, such as the activity movement, the mastery concept, the unit plan, diagnostic and remedial teaching, and the results of scientific studies, have led to the introduction of numerous techniques of teaching that differ significantly from those of an earlier day. The differences between the modern and the more traditional views and practices have frequently constituted a source of conflict and confusion. Consequently, they serve to re-emphasize the importance of giving prospective teachers a well-grounded training in the fundamental principles underlying the teaching art. Appropriately, therefore, a recent publication[1] presents a body of basic principles in the techniques of teaching which attempts to harmonize some of the more divergent points of view that have arisen as a result of the newer trends.

The contents of the volume are organized into five parts. Part I, "Fundamental Principles," deals in a single chapter with the nature and purpose of teaching and of learning. Part II, "Activities and Techniques of Teaching," is concerned with classroom management, lesson plans, assignments, questioning, directing study, socialized recitation, diagnostic and remedial teaching, drills, reviews, tests, and examinations. Part III, "Techniques and Activities of Learning," treats the following types of learning: observational, motor, associative, problem-solving, experimental, creative, and appreciation. Part IV, "The Media of Teaching and Learning," includes chapters on conversation and discussion, story-telling, dramatization, reporting and recitation, and reading. Part V, "Teaching and Learning by Wholes," in a single chapter considers the problem, the unit, the project, and the activity plans of organization. The use of the radio, motion pictures, and various types of visual aids, which have come to occupy important places in present-day education, are not given special treatment.

The discussion of each of the various types of activities and techniques includes a consideration of the general nature and value of a procedure, the opportunities for its use in the school, the making of assignments and directing of class work in connection with it, its motivation, the evaluation of results, and

[1] Gerald Alan Yoakam and Robert Gilkey Simpson, *An Introduction to Teaching and Learning*. New York: Macmillan Co., 1934. Pp. x+498. $2.50.

the nature of the desired outcomes. This systematic method of attack is skilfully used to give the reader a comprehensive, logical, and well-organized view of each type of procedure that is taken up and to bring about a mastery of some of the basic principles that should guide the teacher in its use. Thus, the volume presents something of an intelligent and a critical attitude rather than simply a body of skills of which a technician should be master.

In the opinion of the reviewer, however, the discussion at numerous points has not been given sufficient fundamental basis; that is, it has not been related to, or connected with, some of the basic principles, especially those of educational psychology, which should underlie much of the work of teaching. For example, motor learning is discussed with very incomplete reference to the psychological nature of motor skills and the character of the process of learning them. Again, the use of study guides, workbooks, and guide sheets is repeatedly suggested but without reference at any point to the fundamental importance of the nature of the learning activities in which a pupil engages. Thus the author leaves the impression that the mere use of these devices is sufficient, although, as a matter of fact, they may be constructed or employed in such a formal fashion that they stimulate learning processes which are just as undesirable and fruitless as are those produced by far more traditional procedures. It frequently appears that a thoroughgoing mastery of the principles of teaching presented in the book should rest on basic considerations which have been touched on too briefly or omitted altogether.

To the reviewer the most noteworthy feature of the book consists in the body of procedures, both specific and general, which it presents. It suggests a wealth of valuable activities and techniques for use by both teachers and pupils. The authors have selected liberally from both the modern and the more traditional practices, and in such a way as to harmonize divergent points of view. They have set forth an array of teaching and learning procedures which are consistently related to the underlying philosophy of teaching. This relation, furthermore, is so clearly apparent that the reader's conception of the basic point of view should be greatly facilitated. Because of the many practical suggestions and because of the sound philosophy which these reflect, the book should have a high functional value both for students who are preparing to teach and for experienced workers who are either confused by, or unfamiliar with, the newer developments.

EDWARD F. POTTHOFF

UNIVERSITY OF ILLINOIS

---

*County-school administration.*—In comparison with the amount of published material on the various aspects of city-school administration, little has appeared in print on county-school administration. Comparatively few magazine articles and occasional bulletins, usually from state sources, have been available in this field. While county-school organizations have been in existence for

roughly a hundred years, the first book[1] dealing exclusively with county-school administration has appeared.

For convenience in treatment the problems of county-school administration are classified into three major groups: county-school organization, problems related to budget-making, and problems in administering the program. The chapter headings in each group indicate the phases of the subject which are considered. In the first group chapters appear on "County and Local School Systems," "Administrative Personnel," and "Administrative Offices." In the second group there are chapters on "Budgets in County School Systems," "The Educational Program and the Budget," "Inaccuracies in Budget Practices," "The Allocation of School Revenues," "The Instruction Budget," and "The Salary Schedule." The chapters in the third group are entitled "School Plant Administration," "Management of Auxiliary Activities," "Administering Capital Outlay and Debt Service," "Purchasing Supplies and Equipment," and "Administration Economies."

The book may hardly be described as a comprehensive treatment of the problems of administration in county school systems. Such fields as school organization, records, reports, public relations, education of teachers in service, organization for supervision, qualification of teachers, and many others which might well be discussed in relation to county administration are either ignored completely or given only incidental consideration. Approximately three-fourths of the book is devoted directly to financial problems and to administrative problems considered from the financial standpoint.

The treatment of the topics which are considered is elementary. In spite of the fact that the treatment is largely from the financial viewpoint, a reader could get from this book no clear-cut or specific idea of the use of budgeting and accounting forms or the determination of taxation rates. The author may be correct in assuming that his problem is to apply to county administration the knowledges and skills which the student will have secured elsewhere. Still, it is difficult to see how he has greatly clarified the application of known administrative procedures to the county school system.

With a few exceptions, the factual material presented is drawn from research studies of conditions in Kentucky made by the author himself. The book should prove extremely interesting to Kentucky school people who have not already contacted these materials. To outsiders this information holds only an academic interest, since the picture drawn of Kentucky school conditions is hardly one which others would wish to reproduce in their own states.

The first two chapters in the book, which deal with certain general matters of school organization in the United States as a whole, contain many gross inaccuracies. One or two examples will suffice to illustrate the point. The county as the intermediate unit is thus defined: "In those states in which the local district unit prevails and performs the larger measure of local school functions,

[1] Richard E. Jaggers, *Administering the County School System*. Chicago: American Book Co., 1934. Pp. vi+232. $2.50.

the county becomes the intermediate unit of school control" (p. 6). The following statements concerning this type of organization are misleading, at least as far as many states with this organization are concerned. "In states having the county as the intermediate unit, the local school district performs most of the local functions, and deals with the state not directly, but through the county board of education" (p. 4). Again speaking of the states with the intermediate county unit, the author states: "The local board of trustees . . . . constructs the budget, employs the personnel, purchases equipment, . . . . but all of these activities must have the sanction of the county school authorities before they become effective. . . . . vouchers and warrants for supplies and equipment must be countersigned by the county superintendent" . . . . (pp. 8–9). There are many states using the county as the intermediate unit which have no county board of education and in which local districts do the things mentioned in the quotation without sanction or countersignature of warrants by the county superintendent.

Another inaccuracy, or at least a notable omission, is found in the following statement: "Local school functions in rural areas are discharged by the state through three general types of local school organization: the county as the local school unit; the local district, where the county is the intermediate unit; and the independent or charter district" (p. 9). No mention is made of the town or township as the local unit. Neither is any mention made of the fact that some states have no county school organization of any kind, nor of the states which have a superimposed county or township organization for high-school purposes exclusively.

Chapter iii, which deals with administrative offices and office equipment, is the best chapter in the book. It contains clear and specific recommendations which are directly usable.

As a whole, the book is not well organized nor well written. Many examples of poor, or at least uninspired, English could be cited. In many cases the author evidently shifts from a discussion of a general situation to conditions which apply in only one state or in a few states without so indicating. This shifting leads to confusion and misunderstanding. The bibliography omits some of the best references on some of the topics considered. Several misspelled names in the bibliography indicate lack of care in compilation. The book is well printed and attractive in appearance.

OLIVER L. TROXEL

COLORADO STATE TEACHERS COLLEGE
GREELEY, COLORADO

---

*Substitute teaching in city school systems.*—To make adequate provision for substitute-teaching service is a problem confronting all school superintendents, principals, and members of boards of education. The study here under review[1]

[1] Clare Charles Baldwin, *Organization and Administration of Substitute-teaching Service in City School Systems.* Teachers College Contributions to Education, No. 615. New York: Teachers College, Columbia University, 1934. Pp. viii+116. $1.50.

attempts to aid school administrators in solving this problem. Baldwin's work should find a place in the library of every well-informed school official. It should serve as a handbook or a personnel guide for every school administrator who is faced with the problem of providing substitute teaching. The study should be used as a part of the basic material in teacher-personnel courses in teacher-training institutions. In fact, any teacher-training course having to do with the internal details of school administration should make use of this study.

After a list of fourteen criteria had been set up for evaluating practices and establishing standards for substitute-teaching service, a questionnaire (constituting a part of the National Survey of the Education of Teachers) dealing with the general status of substitute-teaching service was sent to the school superintendents in 189 cities with populations of more than 50,000. Replies were received from 143 superintendents. Many additional data were collected by the author in visits to school superintendents. Copies of record forms and instructions having to do with substitute-teaching service were studied, and in many instances the school laws and rules and regulations pertaining to substitute teachers were reviewed. The data are reported under the following chapter headings: "Organizing and Directing the Substitute-teaching Service," "Recruiting and Selecting the Substitute Personnel," "Inducting Substitutes into Daily Teaching Service," "Using the Services of Substitutes," "Supervising and Training Substitute Teachers in Service," and "Business and Accounting Practices Affecting Substitute-teaching Service." The study is of the normative type and presents a rather adequate picture of the current status of substitute teaching in large cities. The study is well done, and the report is timely.

Many proposals and recommendations are made, regarding some of which the authorities in school administration are not in agreement. For example, it is recommended that substitute-teaching service be administered in the central office and under the immediate supervision of the superintendent. A large number of school administrators advocate that the organization and the administration of substitute teaching should be carried on by the director of personnel who in turn is responsible to the superintendent. The author makes a number of recommendations which should serve as helpful guides to superintendents, principals, and board members. For example, "Thirteen cities out of 142 reported that pupils are sometimes used in the capacity of substitute teachers. The practice is condemned as violating the privilege of the classroom and as indicating inefficient administration" (p. 34). In view of the data collected, the author recommends that the use of student-teachers during training periods as substitutes for absent critic teachers might reasonably be extended.

The author says:

> The average number of substitute-teaching days per regular elementary teacher for the school term is 5.65 days. For the junior high school teacher the term average is 3.45 days, and for the senior high school teacher, 3.94 days. . . . .
>
> Table 22 shows a median ratio in the elementary-school division of 51 regular teachers to 1 permanent substitute; in the junior high school division of 61 to 1; and in the senior high school division of 61 to 1 [pp. 69–70].

These data indicate that, the larger the number of substitute-teaching days to be taught, the smaller the ratio of permanent substitutes to number of teachers. Such is what one would expect. The study might have been strengthened if this relation had been pointed out.

On the whole, the study is a distinct contribution to the literature in personnel administration.

DENNIS H. COOKE

GEORGE PEABODY COLLEGE FOR TEACHERS

---

*Typewriting and reading.*—The school has done little in instructing young children in the use of the typewriter. Many persons have wondered whether such instruction would have any effect on beginning reading, and this question has now been carefully investigated.[1] The author of the experiment introduces her subject by pointing out that the typewriter has been used in the school at least since 1890. Up to the present, however, this use has been confined chiefly to the high school. It is the author's purpose to find what effect the use of the typewriter by first-grade pupils has on learning to read when typewriting becomes an activity in the school program causing a subtraction of approximate proportional amounts of time from each existing activity.

Chapter ii of the study surveys methods of teaching reading and writing. Special attention is paid to the changes which have taken place in the objectives for teaching reading, and the question of the relation of typewriting to these objectives is raised. Then follow a history of methods in teaching handwriting and a short history of the development of the typewriter.

Chapter iii contains a summary of investigations bearing on the author's problem.

The experimental procedure is outlined in chapter iv. A perusal of this procedure shows how carefully the author provided a controlled situation. The equivalent-group method was used. The experimental and the control groups were chosen on the basis of mental ages and chronological ages. Care was taken to secure homogeneity of instruction and to avoid any chance typewriting by the control group. The typewriting group spent from seventy-five to ninety minutes a week at the typewriter. During this time the control group carried on the usual program. Each classroom contained both an experimental and a control group. Thus, the groups worked as separate units only when the experimental group was engaged in typewriting. The experiment lasted from October 10, 1931, until May 20, 1932. Tests were given in January and in May.

Chapter v gives an interpretation of the results by means of tables and graphs. The data indicate that at the beginning of the experiment the two groups were practically equivalent with respect to mental and chronological

[1] Cecilia E. Unzicker, *An Experimental Study of the Effect of the Use of the Typewriter on Beginning Reading.* Teachers College Contributions to Education, No. 610. New York: Teachers College, Columbia University, 1934. Pp. viii+96. $1.50.

ages and in intelligence scores and that they were close to equality in number of days of school attendance. As a result of the final equating there were 113 pupils in each group.

The summary of results indicates a constant tendency for growth to favor the experimental pupils in reading for thought, oral reading, methods of studying and recognizing words, speed of reading, visual perception, and interest in reading. The pupils whose reading was helped most by the use of the typewriter were those with intelligence quotients of 80–90.

The last chapter contains an excellent summary. Here the author warns the reader against drawing sweeping conclusions, pointing out that on no one item measured was there a large enough number of children to give a highly reliable statistical interpretation. Moreover, the equating of the groups was not absolute, and the children in the experimental group had more experience with verbal units as an integral part of the typewriting. The experiment indicates, however, that typewriting can be used to advantage in the work of Grade I. It apparently does not harm the reading of first-grade pupils, and they derive much enjoyment from the use of the typewriter.

The study is very well done indeed. The material is well organized and is presented in a clear and an interesting manner. Tables and graphs are used to advantage in the interpretation of results; samples are given of the materials used; and a good bibliography is included.

W. H. Gray

Kansas State Teachers College
Emporia, Kansas

---

*Speech training and correction in the elementary grades.*—The three books included in this review[1] are designed for use chiefly in speech-correction work but also for general speech training in the elementary grades. The books are designed mainly for work with articulatory defects; only *The Jingle Book* contains any mention of stammering or stuttering.

*The Jingle Book for Speech Correction* differs somewhat from the other two with regard to the fundamental principles advocated. Wood favors most definitely the stimulation method for the correction of articulatory disorders. The task before a person who would correct a defect, the author believes, is to build up the correct sound image in the mind of the child and, when he hears and can reproduce the sound correctly, to bring about an awareness of the sound in speech. The teacher is to repeat the isolated sound correctly four or five times and then to ask the child to give the sound once. This procedure is to be re-

[1] *a*) Alice L. Wood, *The Jingle Book for Speech Correction.* New York: E. P. Dutton & Co., Inc., 1934. Pp. lxxii+116.

*b*) Sophie A. Pray and Others, *Graded Objectives for Teaching Good American Speech.* New York: E. P. Dutton & Co., Inc., 1934. Pp. 90.

*c*) Letitia Raubicheck, *Improving Your Speech:* A Pupil's Practice Book in Speech Training with Phonetic Aids. New York: Noble & Noble, 1934. Pp. viii+164. $1.00.

peated until the child's response is correct. According to Wood, the teacher need make no comment on the position of the tongue, lips, or teeth, except in the most difficult cases when it may be necessary to bring certain muscular movements into consciousness. The jingles or rhymes in the book constitute practice material and are built about all the thirty-eight sounds in the language and about most of the troublesome combinations. Wood devotes only three and one-half pages to the subject of stammering. It would be difficult to outline a course of treatment on the basis of her discussion because she gives hardly more than a fragment.

The book by Pray and others is constructed on the unit plan. Each unit deals with one class of sounds and includes instructions for the production of the sounds together with lists of drill words. The book is intended for teachers who have a knowledge of phonetics. It advocates, to a certain extent, the use of the stimulation method described above.

Raubicheck's volume is a pupil's practice book in speech training, with phonetic aids. It is illustrated by Charles W. Raubicheck. It is based on the principle of beginning with the sound and expanding the lesson through words and phrases until the pupil can master the complete sentence. The book is arranged on the unit plan, each unit representing a single sound. The book deals with every sound of the English language. In addition to instructions for the production of each sound and the necessary drill materials, there are a number of short, simple discussions of various phases of speech training. Diagnostic tests for use at the beginning and the end of the course are also included.

These three books will be of genuine value to anyone concerned with speech correction or speech training in the public schools. Many of the jingles in Wood's book will appeal to children—and to many adults—whether they are concerned with speech disorders or not.

WENDELL JOHNSON

UNIVERSITY OF IOWA

---

*Generally accepted and controversial standards for a school health program.*—Although many contributions have been made to various phases of the school health program, Anette M. Phelan[1] is the first to set up general working standards for the school health program as a whole and to isolate for appraisement standards which, although generally accepted, were rated as of questionable value or as definitely undesirable by administrators and others exerting an influence on the school health program.

The first part of the study is concerned with a survey of the literature on school health from the last quarter of the nineteenth century to 1931. From the "narrow utilitarian purpose of offering fire protection and protection from the poisonous influences of carbon-dioxide concentration in the air of the classroom," the author indicates the gradual development of the program to the present-

[1] Anette M. Phelan, *A Study of School Health Standards*. New York: American Public Health Association, 1934. Pp. x+250. $2.50.

day "acceptance of a program of healthful living, wide in scope, with equal importance assigned to the mental, emotional, and physical aspects of health, and with an emphasis upon the educational implications of such a program" (p. 37).

In the second part of the study health standards in the administration of the health program and health education are established, based on research, present practices in schools, standards set up in textbooks by authorities, and conference reports on health problems. The 242 standards finally established were evaluated by a group of carefully selected raters, all leaders in the field of school health. As a result of their ratings, thirty-three standards were found to be controversial in the sense that the group as a whole did not consider the standards essential to a comprehensive school health program.

The third and last part of the study is concerned with these controversial standards. The general attitude of the raters regarding each is presented, and these controversial standards are subjected to the following criteria.

> Do present practices and trends in so far as they are revealed in current literature support the provisions of the standard? Do they support the treatment accorded the standard by the raters?
>
> Do the conclusions drawn from the findings of scientific investigations or from published opinions [of] recognized authorities in the field support the provisions of the standard? Do they support the treatment accorded standard by the raters?
>
> Do accepted standards tend to maintain acceptance?
>
> What development if any in the controversial issues is reflected in the literature?
>
> What are the possibilities in research for the settlement of the controversy in relation to the standard? [P. 89.]

Of especial significance is the author's examination of each questioned standard. Adequate data are presented to enable the reader to appraise each. The study is a scholarly piece of research and should prove of distinct value to administrators and directors interested in the health objective of the educative process. It is a contribution which should tend to raise the general status of the health program of the average school up to the level of the program of the best school.

MARGUERITE M. HUSSEY

NEW YORK UNIVERSITY

---

*Health stories for the lower grades.*—The chief aim of health teaching in the primary grades is the building-up of correct health habits. Much of the responsibility for the development of good health habits in these grades rests on the teacher. The frequent repetition of desired practices which is necessary if good habits are to be formed is brought about largely by constant observation, checking, and encouragement on the part of the teacher. Little can be accomplished by reading material alone. Reading material can, however, serve a very real purpose in health-teaching in the primary grades by helping to build up the right attitudes toward desirable health practices. The authors of two

books on health[1] have planned their books with the formation of correct attitudes as their chief objective.

The books are made up largely of stories based on true life situations. The stories in Book I, designed for Grade I, deal with cleanliness, care of the teeth, care of the eyes, the building-up of health and strength, the avoidance of sickness, and safety and first aid. The stories in Book II, designed for Grade II, have to do with neatness and cleanliness, care of the body, nutrition, safety, and mental hygiene. In the stories the authors have taken care to see that pleasure is associated with the following of good health practices; for example, Peggy had a very good time when she worked in her garden in the fresh air and sunshine, and Ann had a happy day after she had had a good night's sleep and had eaten a good breakfast slowly. In the stories a few of the simple "whys" of health habits are given. The children are told, for example, that exercise is needed for the development of strong muscles and that certain foods are good because they help build strong bones and teeth.

In addition to the stories there are pages of simple informational material. "Keeping the Hair Clean," "Why We Need Ears," "How You Can Make Butter," "Safety Signs," and "The Thermometer" are among the topics discussed. There are also pages of exercises which serve to emphasize the ideas developed in the text material. Several of the exercises are based on sets of small pictures.

Without any doubt, the books will make a decided appeal to children. The brightly colored pictures are delightful, and the stories are, for the most part, interesting and well told. The vocabulary has been so carefully controlled that children of the grades for which the books are designed should be able to read the material without difficulty. The exercises have been skilfully worked out. All in all, the books should prove to be very helpful in the building-up of correct attitudes and may be strongly recommended.

Another recent book on health[2] is designed as a supplementary reader for use in connection with the fourth-grade health program. It contains twenty-four stories of the experiences of Jimmie and Betty. Many of the stories are based on real life situations; some, on the other hand, are largely fanciful. At the conclusion of almost every story there are suggestions for dramatizing the story, questions about the story, or suggestions for a game based on the story. The first and the last stories of the book deal with health rules in general. The other stories deal primarily with foods. One, for example, emphasizes the fact that certain foods furnish roughage; another, that the peelings of certain fruits and vegetables are wholesome. Some stories deal with single articles of diet. Milk, eggs, butter, onions, parsley, and nuts are among the foods singled out for special

[1] Anna B. Towse, William S. Gray, and Florence E. Matthews, *Health Stories:* Book I, pp. 144, $0.60; Book II, pp. 176, $0.68. Chicago: Scott, Foresman & Co.

[2] Mildred Houghton Comfort, *Happy Health Stories*. Chicago: Beckley-Cardy Co., 1934. Pp. 160. $0.70.

emphasis. An attempt is made to give some scientific basis for the food habits which the reader is to be led to form. Such terms as "calorie," "protein," and "vitamin" are introduced.

In the opinion of the reviewer, it is to be regretted that diet is the only aspect of nutrition to which any considerable attention is given. It is to be regretted, too, that so little attention has been given to the wise choice of meals. Some of the stories emphasizing the importance of single articles of diet are likely to lead to erroneous conclusions. The story called "Little Butter Ball," for example, leads one to believe that, if only a child eats enough butter, he is sure to be healthy and strong.

The book is attractively illustrated in three-color pictures. The print is clear and easy to read, and the vocabulary is well within the reach of fourth-grade children. When technical terms are used, they are explained in simple language. At least some of the stories will doubtless prove helpful in building up good attitudes toward correct food practices. The teacher should take care, however, that wrong inferences are not drawn.

BERTHA M. PARKER

---

## CURRENT PUBLICATIONS RECEIVED

### GENERAL EDUCATIONAL METHOD, HISTORY, THEORY AND PRACTICE

BOSSING, NELSON L. *Progressive Methods of Teaching in Secondary Schools.* Boston: Houghton Mifflin Co., 1935. Pp. xvi+704. $2.75.

BOUCHER, CHAUNCEY SAMUEL. *The Chicago College Plan.* Chicago: University of Chicago Press, 1935. Pp. xii+344. $3.00.

COX, PHILIP W. L., and LANGFITT, R. EMERSON. *High School Administration and Supervision.* Chicago: American Book Co., 1934. Pp. xx+690.

DRURY, SAMUEL S. *The Care of the Pupil.* The Inglis Lecture, 1935. Cambridge, Massachusetts: Harvard University Press, 1935. Pp. 72.

*The Education of Teachers.* Yearbook XXIII of the National Society of College Teachers of Education. Chicago: University of Chicago Press, 1935. Pp. 266. $1.50.

GILLAND, THOMAS MCDOWELL. *The Origin and Development of the Power and Duties of the City-School Superintendent.* Chicago: University of Chicago Press, 1935. Pp. xiv+280. $2.00.

HUBBARD, ELEANORE. *The Teaching of History through Dramatic Presentation.* Chicago: Benj. H. Sanborn & Co., 1935. Pp. xii+448. $1.76.

LINCOLN, EDWARD A., and WORKMAN, LINWOOD L. *Testing and the Uses of Test Results.* New York: Macmillan Co., 1935. Pp. xii+318 $2.00.

MACGREGOR, GREGOR. *Achievement Tests in the Primary School:* A Comparative Study with American Tests in Fife. Publications of the Scottish Council for Research in Education, VI. London: University of London Press, Ltd., 1934. Pp. xiv+136.

NEILSON, N. P., and COZENS, FREDERICK W. *Achievement Scales in Physical Education Activities:* For Boys and Girls in Elementary and Junior High Schools. New York: A. S. Barnes & Co., Inc., 1934. Pp. x+172. $1.60.

PIERCE, PAUL REVERE. *The Origin and Development of the Public School Principalship.* Chicago: University of Chicago Press, 1935. Pp. x+224. $2.00.

SMITH, NILA BANTON. *American Reading Instruction:* Its Development and Its Significance in Gaining a Perspective on Current Practices in Reading. Newark, New Jersey: Silver, Burdett & Co., 1934. Pp. x+288+2 charts. $1.96.

STUDEBAKER, J. W. *The American Way:* Democracy at Work in the Des Moines Forums. New York: McGraw-Hill Book Co., Inc., 1935. Pp. xii+206. $2.00.

WEEKES, BLANCHE E. *Literature and the Child.* Newark, New Jersey: Silver, Burdett & Co., 1935. Pp. vi+456. $2.16.

WRIGHTSTONE, J. WAYNE. *Appraisal of Newer Practices in Selected Public Schools.* New York: Teachers College, Columbia University, 1935. Pp. viii+118.

## BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

BUTLER, CHARLES E., and BELSLY, BESSIE F. *Vacation Days with Fluff and Trixy.* Chicago: Lyons & Carnahan, 1934. Pp. vi+154. $0.60.

CHARTERS, W. W., SMILEY, DEAN F., and STRANG, RUTH M. Health and Growth Series: *Good Habits*, pp. vi+186, $0.60; *Living Healthfully*, pp. vi+184, $0.60; *Wise Health Choices*, pp. vi+212, $0.72; *Health Problems*, pp. vi+230, $0.80; *Adventures in Health*, pp. vi+226, $0.80; *Health Knowledge*, pp. vi+254, $0.80. New York: Macmillan Co., 1935.

HUNTER, GEORGE W., and WHITMAN, WALTER G. The March of Science: *My Own Science Problems*, pp. xiv+432, $1.20; *Science in Our Social Life*, pp. xiv+452, $1.28; *Science in Our World of Progress*, pp. xvi+582, $1.60. Chicago: American Book Co., 1935.

JOSLIN, JULIA E., and PEET, HARRIET E. *The Story Workbook in Language.* Boston: Houghton Mifflin Co., 1934. Pp. 94. $0.24.

MYERS, SUSANNA. Let's Pretend: Portfolio of Plays with Songs for Children. *Let's Pretend*, pp. 8; *Primer of Play-Acting*, pp. 16; *Mary Is Lost*, pp. 8; *The King of France*, pp. 8; *Dreams*, pp. 4; *Signs of Spring*, pp. 4; *The Surprise Party*, pp. 8; *Baby Brother*, pp. 4; *The Clock*, pp. 8. New York: C. H. Congdon (508 West Twenty-sixth Street), 1934. $2.00 (complete portfolio).

ROEHL, LOUIS M. *Problems for School and Home Workshop.* Milwaukee, Wisconsin: Bruce Publishing Co., 1935. Pp. 88.

SCHORLING, RALEIGH, and CLARK, JOHN R. Mathematics in Life: Unit A, *Measurement in Modern Life and in the Long Ago.* Yonkers-on-Hudson, New York: World Book Co., 1935. Pp. 44. $0.24.

The Thorndike Library: *Andersen's Fairy Tales* by Hans Christian Andersen, pp. viii+224; *Black Beauty* by Anna Sewell, pp. x+280; *Heidi* by Johanna

Spyri, pp. viii+360; *The Little Lame Prince* by Miss Mulock and *The Water Babies* by Charles Kingsley, pp. 120 and 160; *Pinocchio* by Carlo Collodi, pp. xii+232; *A Wonder Book* by Nathaniel Hawthorne, pp. 226. Edited to fit the interests and abilities of young readers by Edward L. Thorndike. New York: D. Appleton-Century Co., Inc., 1935. $0.80 each.

YOAKAM, GERALD A., BAGLEY, WILLIAM C., and KNOWLTON, PHILIP A. *Reading To Learn*, Book I. A Work-Type Informational Reader. New York: Macmillan Co., 1935. Pp. xvi+402. $0.84.

## PUBLICATIONS OF THE UNITED STATES OFFICE OF EDUCATION AND OTHER MATERIAL IN PAMPHLET FORM

*Annual Report of the General Education Board, 1933–1934.* New York: General Education Board, 1935. Pp. viii+88.

BENTLEY, JEROME H. *The Adjustment Service:* A Report of an Experiment in Adult Guidance. New York: American Association for Adult Education, 1935. Pp. x+64.

BUTLER, NICHOLAS MURRAY. *Annual Report for 1934 of the Division of Intercourse and Education.* New York: Carnegie Endowment for International Peace, 1935. Pp. 68.

CASANOVA, TEOBALDO. *Educational Psychology and Some Aspects of Education in Latin America.* San Juan, Puerto Rico: Imprenta Venezuela, 1934. Pp. viii+170. $1.25.

*Conserving the Sight of School Children:* A Program for Public Schools. Report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the Cooperation of the National Society for the Prevention of Blindness, Inc. Prepared under the direction of Thomas D. Wood. New York: National Society for the Prevention of Blindness, 1935 (revised). Pp. vi+54. $0.35.

DENISON, MERRILL. *The Educational Program* (A Discussion of Facts and Techniques in Educational Broadcasting). New York: Radio Institute of the Audible Arts (80 Broadway), 1935. Pp. 14.

*Psychology and Methods in the High School and College.* Review of Educational Research, Vol. IV, No. 5. Washington: American Educational Research Association of the National Education Association, 1934. Pp. 445–564. $1.00.

*Public Secondary Schools for Negroes in the Southern States of the United States:* A Complete List of All Public Schools for Negroes in the Southern States of the United States That Offer Any Instruction at All on the Secondary Level, as of October 1, 1933. Occasional Papers Published by the Trustees of the John F. Slater Fund, No. 29. Washington: John F. Slater Fund (726 Jackson Place, N.W.), 1935. Pp. 72.

Recent issues of the Office of Education:

Bibliography No. 29, 1935—*Good References on the Curriculum and Social Change* compiled by Katherine M. Cook and Florence E. Reynolds. Pp. 10.

Bulletin No. 2, 1933—*Statistical Summary of Education, 1931–32:* The Preface to the *Biennial Survey of Education in the United States: 1930–1932* (advance pages). Pp. 12.

Bulletin No. 11, 1934—*Courses in Occupational Information* by Maris M. Proffitt. Pp. vi+48.

Bulletin No. 12, 1934—*Privately Controlled Higher Education in the United States* by Fred J. Kelly and Ella B. Ratcliffe. Pp. vi+56.

Pamphlet No. 50 (1934)—*Public Education in the Virgin Islands* by Katherine M. Cook. Pp. viii+32.

Vocational Education Bulletin No. 177, Agricultural Series No. 45 (1934)—*Vocational Agriculture in Relation to Economic and Social Adjustment:* Report of Conference on the Relation of Vocational Agricultural Education to Emergency and Long-Time Programs Affecting Agriculture. Pp. xviii+68.

*School Legislation Affecting Young Children.* Washington: National Education Association, 1935. Pp. 32. $0.15.

*Selected Bibliography for Homemaking Instruction in Secondary Schools.* Department of Education Bulletin No. 1. Sacramento, California: State Department of Education, 1935. Pp. viii+22.

SMITH, GEORGE H. E., and BEARD, CHARLES A. *The Recovery Program (1933–1934):* A Study of the Depression and the Fight To Overcome It. New York: Macmillan Co., 1934. Pp. 60. $0.48.

*Twenty-ninth Annual Report of the Carnegie Foundation for the Advancement of Teaching.* New York: Carnegie Foundation for the Advancement of Teaching, 1934. Pp. 168.

## MISCELLANEOUS PUBLICATIONS

TRETTIEN, AUGUSTUS W. *Why We Feel That Way:* An Analysis of the Human Emotions. Boston: Stratford Co., 1935. Pp. vi+452. $3.00.